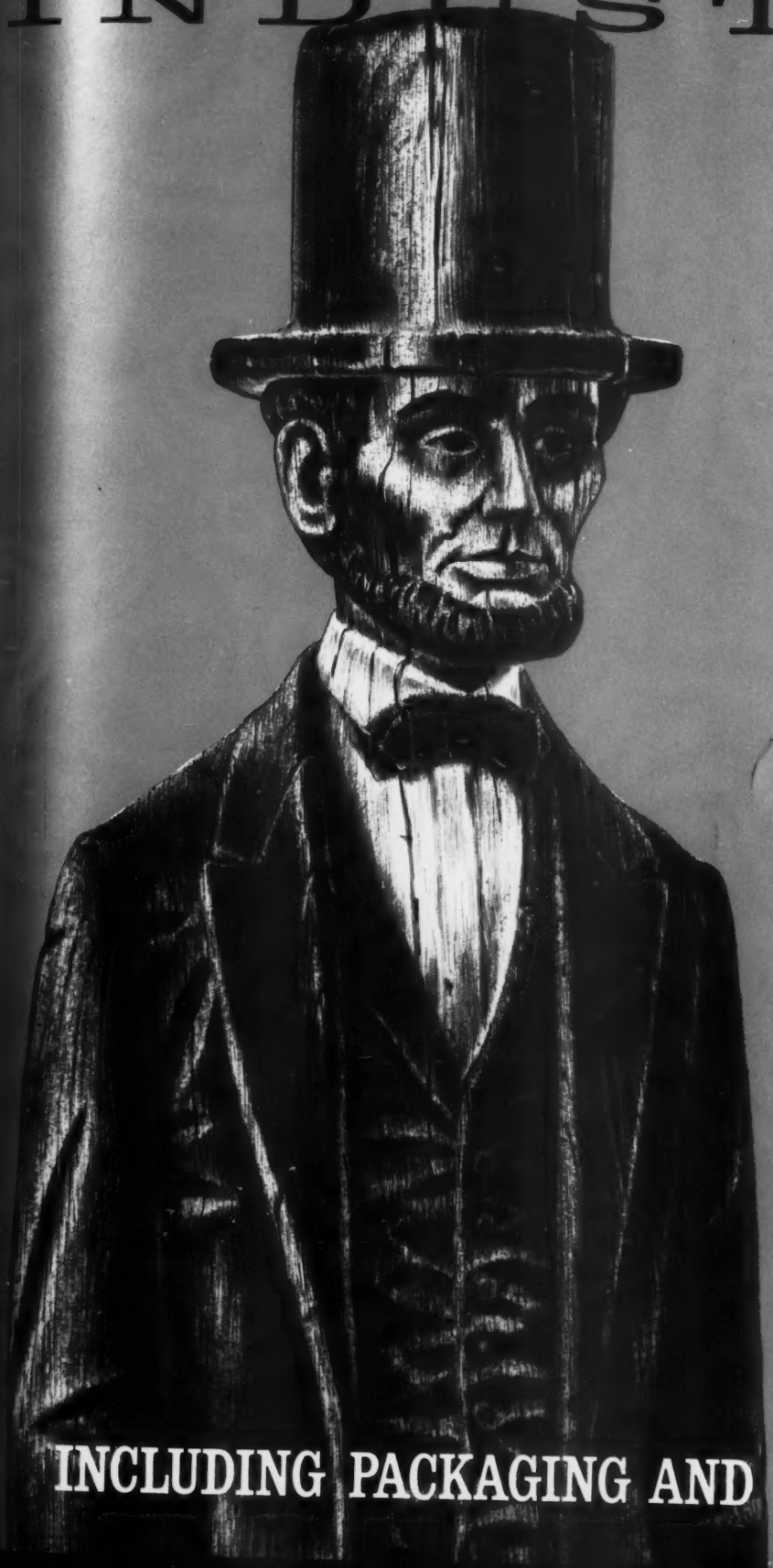
DRUG & COSMETIC INDUSTRY

FEBRUARY 1959



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Drug and Cosmetic Industry

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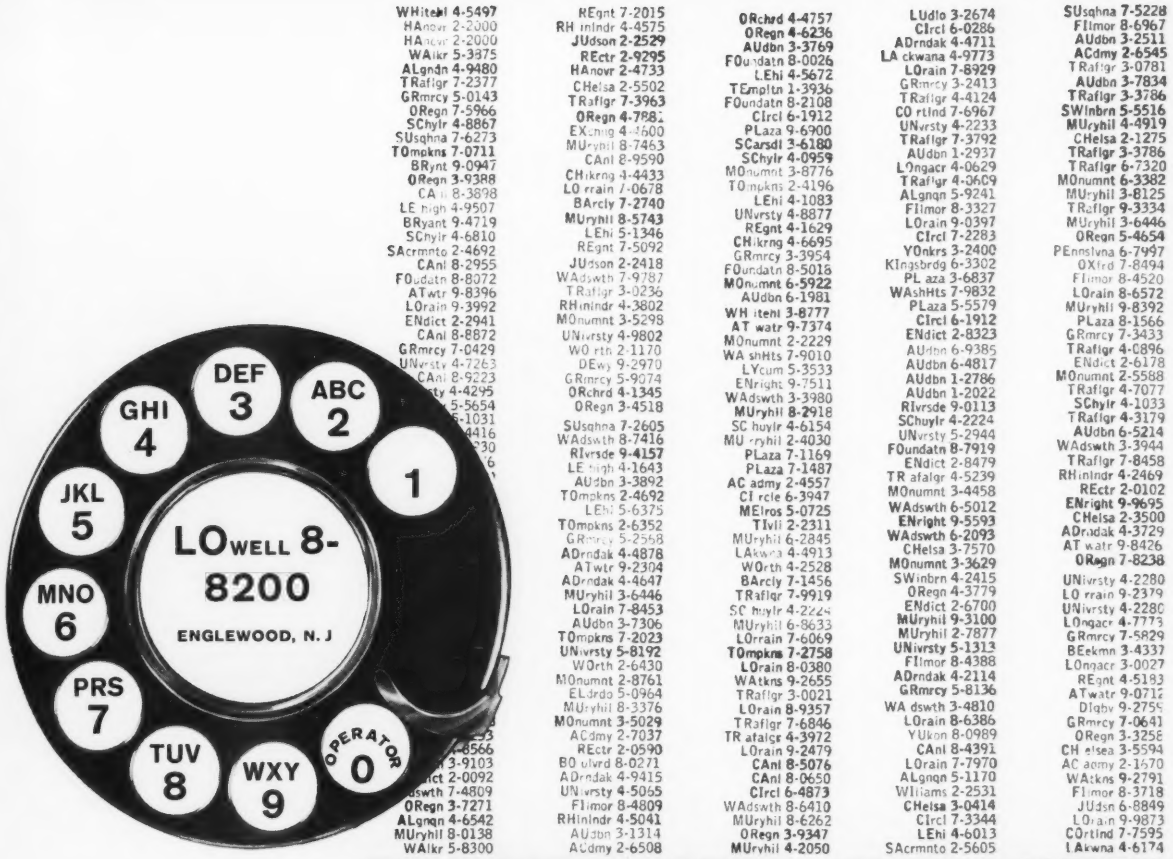

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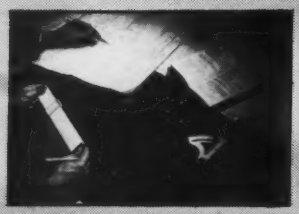

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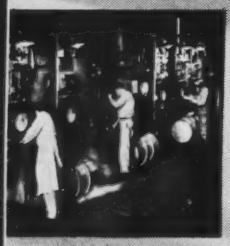

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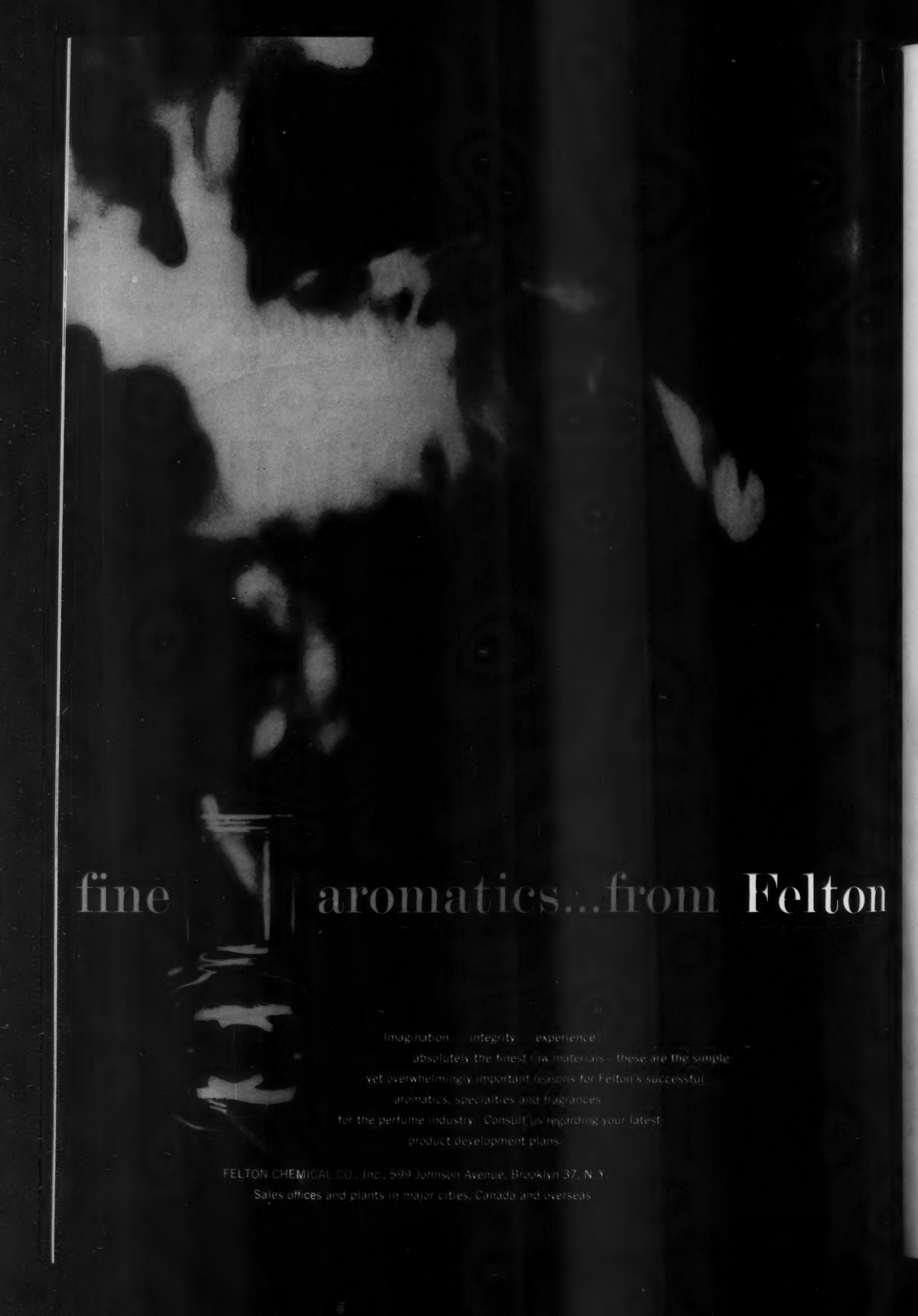
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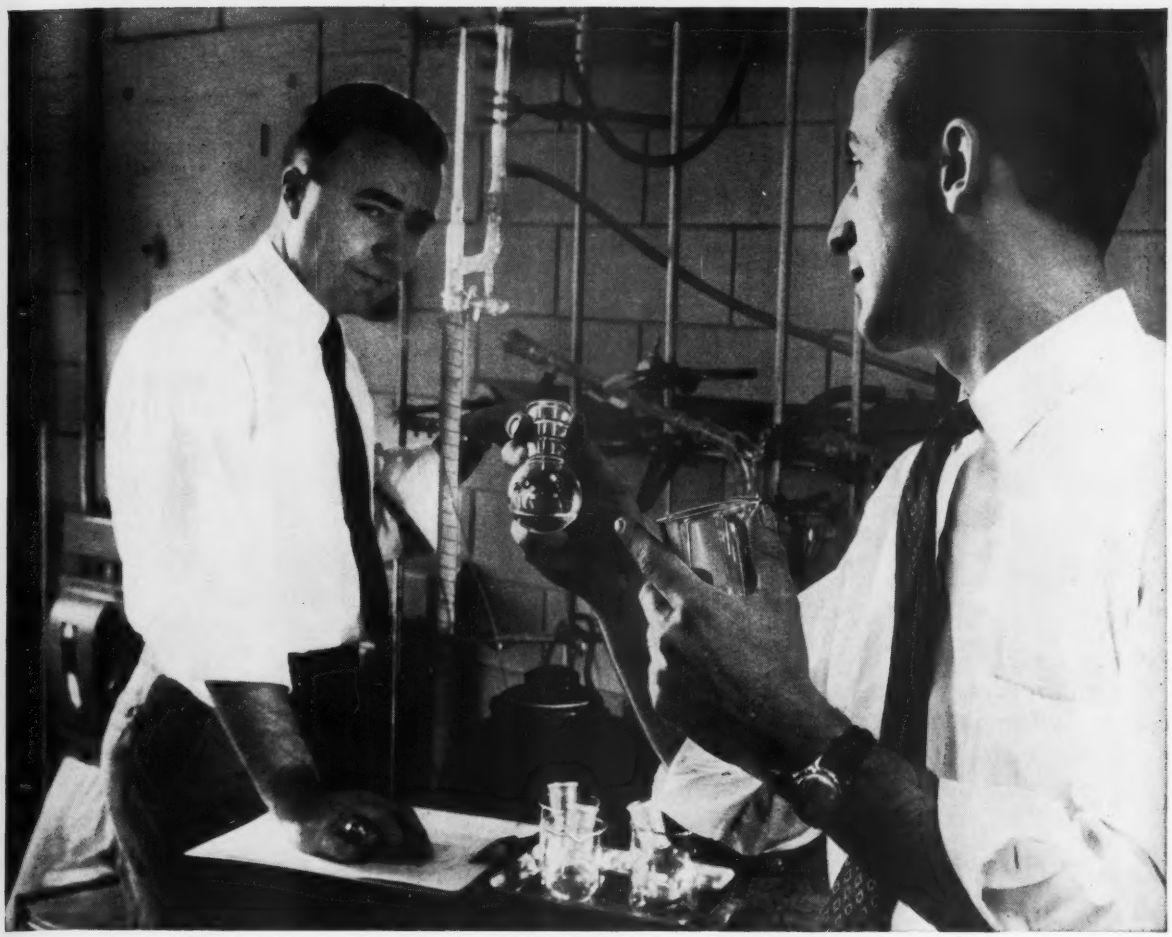

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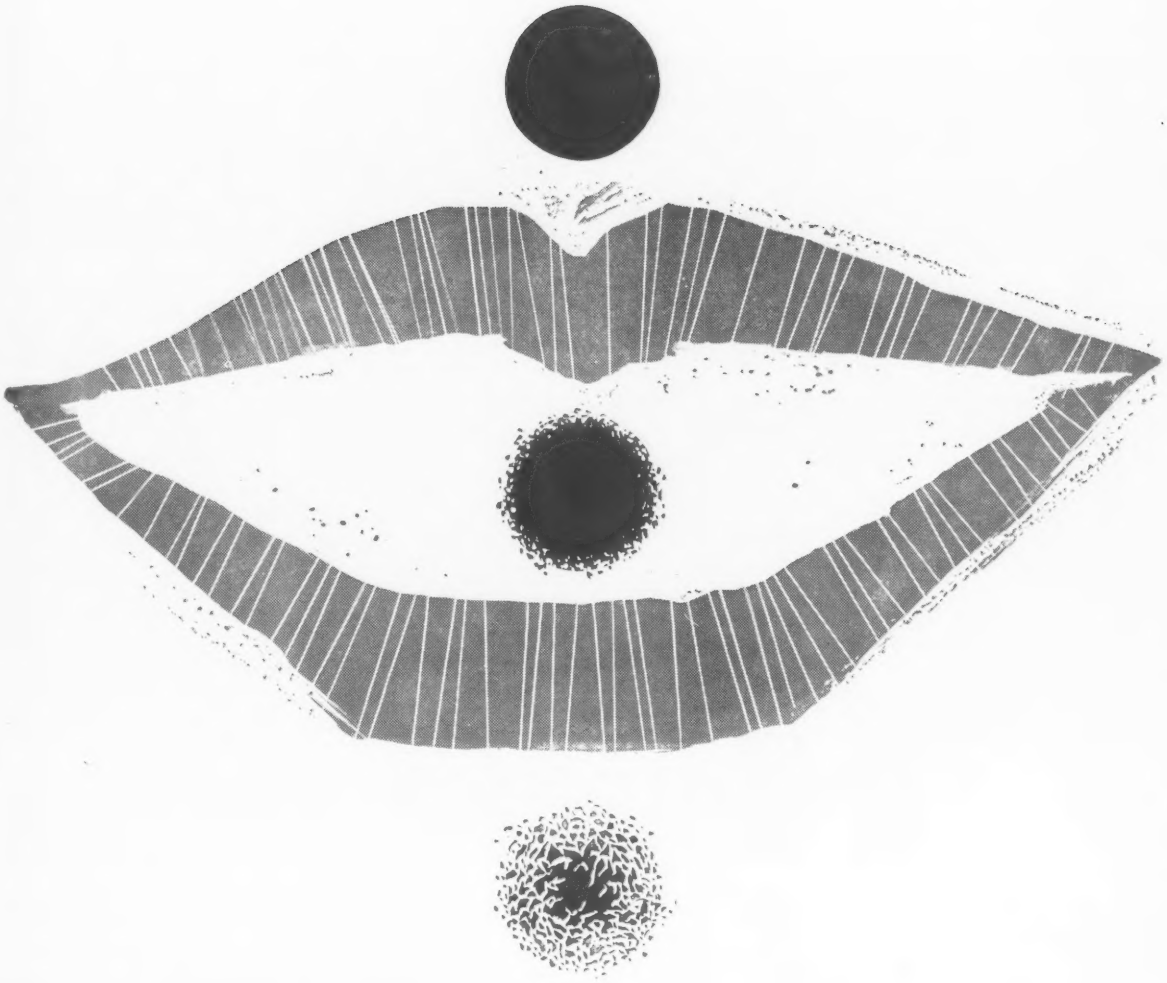

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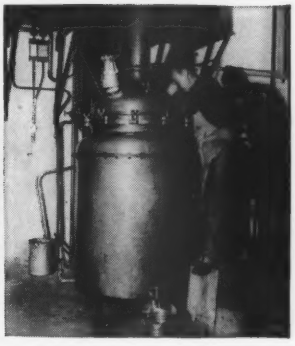

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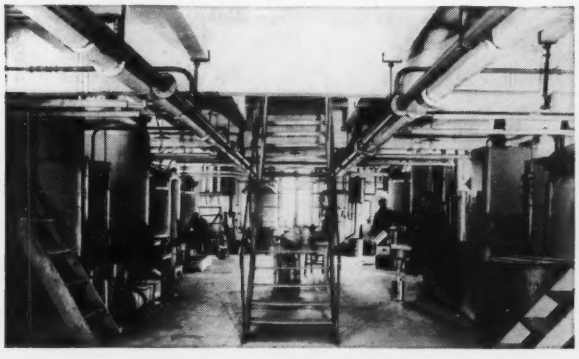
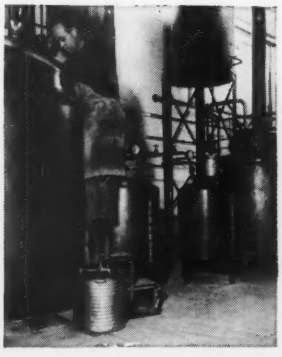

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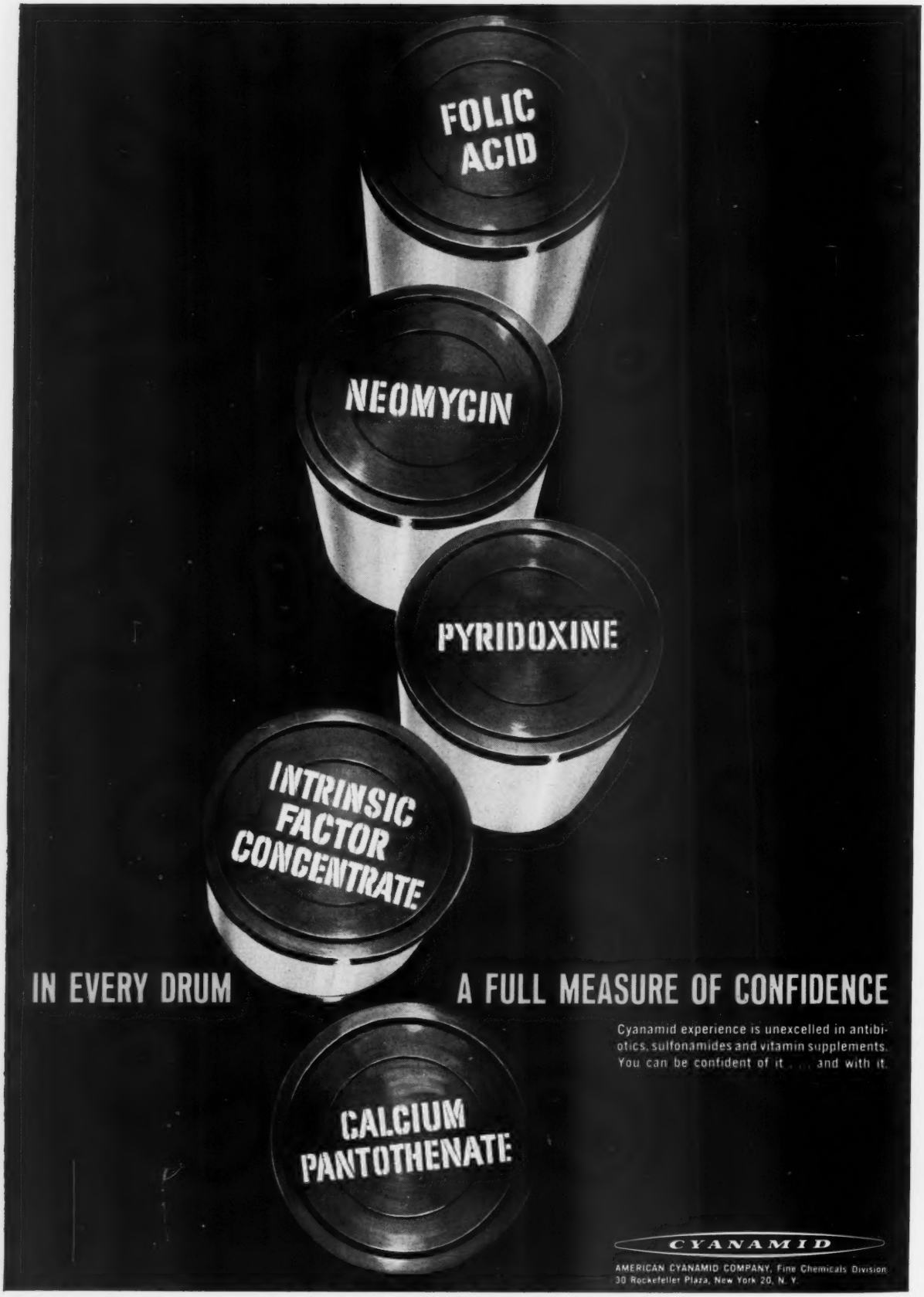
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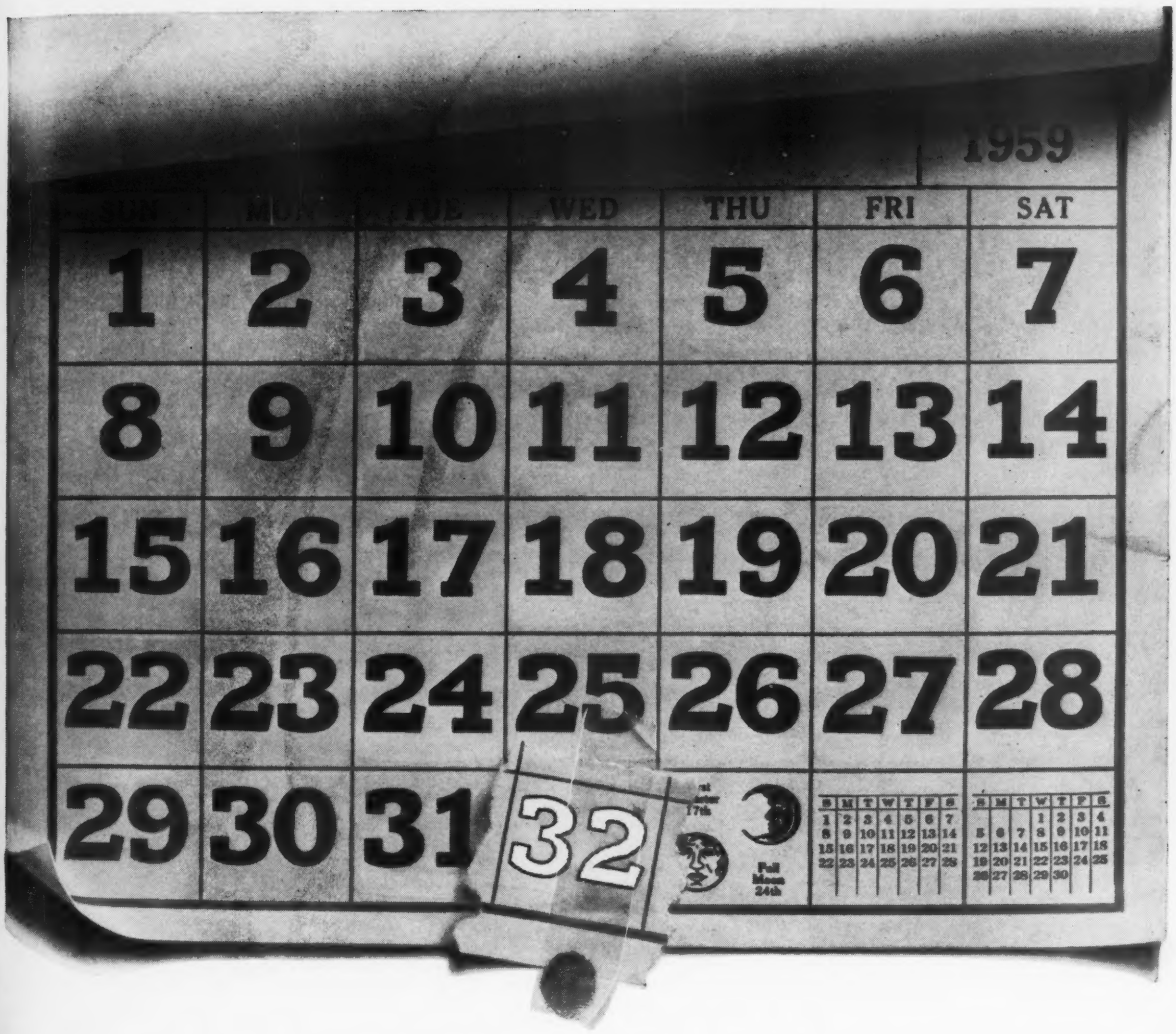

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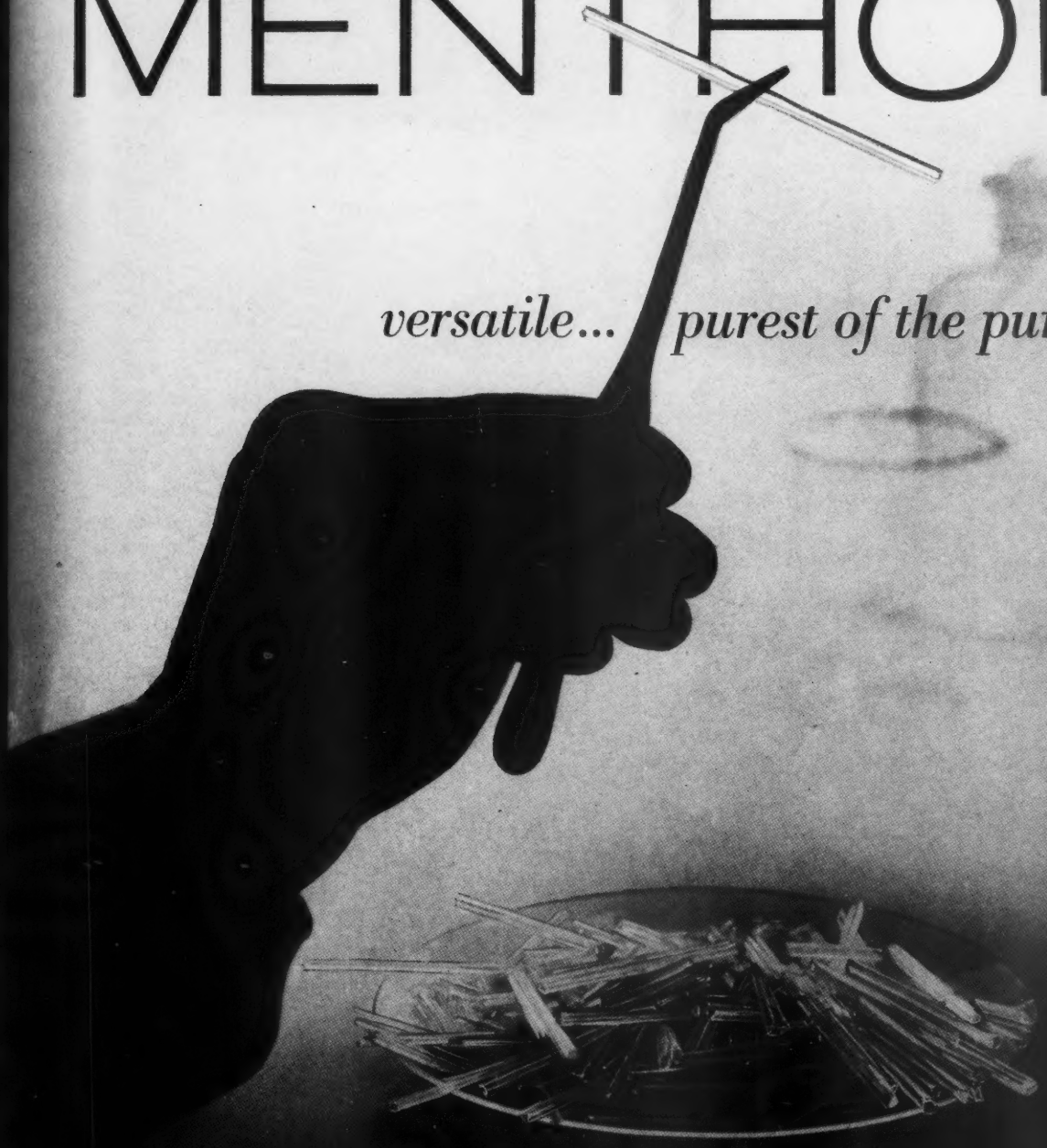

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Keeping Posted

Fewer 1958 Trademarks

A rush of applications for trademarks in the closing weeks of 1958 sent the application total for the year to 21,929, an increase of 539 over 21,390 for 1957, according to the U. S. Trademark Association. Registrations in 1958 were off to 15,028, from 17,234 in 1957, due to the lateness of many applications and the fact that the Patent Office had only 28 or 29 examiners handling trademarks in 1958, compared with 30 in 1957.

The drug industry introduced 545 trademarked specialties in 1958, 36 more than in 1957, and the greatest number of any year to date.

During 1958 the courts found a confusing similarity between Mictine for a drug for treatment of hypertension and nephrosis, and Micturin for a drug used for urinary infection. However, the courts found no confusion between Dramamine and Bonamine, motion sickness drugs.

The Patent Office found likelihood of confusion between Neovital and Meovite for vitamin preparations; Dermatone for a liquid hand cleaner, and Dermatone for a chemical used in dermatology treatment; Normin for an anti-depressant, and Dormin for an insomnia and headache preparation; Sedaquil for analgesic capsules, and Sedamyl for sedatives.

The Patent Office found no confusing similarity between Placin for analgesic tablets, and Dolcin for rheumatic treatment preparations; Wander for a tuberculosis medication and Warner for a line of pharmaceuticals; Coloral for hair rinses on the one hand and the related marks Clairol, Lady Clairol and Miss Clairol used by the other party for hair dyes, lotions, tints, washes, shampoos and dye removers.

Census of Manufactures Under Way

The Census of Manufactures for 1958 is now being conducted by the Bureau of the Census, U. S. Department of Commerce, Washington 25, D.C. Report forms are being mailed to an estimated 285,000 firms which employed paid personnel during all or part of 1958. Completed forms are returnable within 30 days after receipt, although additional time will be granted where necessary. For this industry there are two main classifications: (1) Drugs and Medicines; and (2) Essential Oils, Perfumes, Cosmetics, and Toilet Preparations.

Cosmetics Chemists to London

The Society of Cosmetic Chemists is making arrangements to attend the British Congress of Cosmetic Science to be held in London April 15, 16, and 17, by the Society of Cosmetic Chemists of Great Britain. Members are to leave New York by Pan American Jet Plane on Sunday, April 12, arriving in London the evening of the same day. They leave London by Jet Plane on Saturday, April 18, returning to New York the same day.

Papers to be presented during the three-day conference are: Analytical Methods in Assessing the Value of Perfumery Raw Materials, by H. van den Dool; Untra-Violet Spectrophotometric Procedures in Essential Examination, by J. B. Stenlake and W. D. Williams; Specifications for Raw Materials and Finished Products, by N. J. Van Abbe; Trends in Mechanization in Laboratories, by R. Barrington Brock; The Function of Consumer Testing in Product Development and Marketing, by L. H. Ovens; Laboratory Tests As a Basis for Accurate Product Market Testing, by Donald H. Powers; Product Evaluation from the Rheological Aspect, by L. S. Adler; Patch Testing Methods, by E. J. Moynahan; The Effect of Rheological Properties on Mixing and Heat-Transfer Operations, by E. S. Sellers and W. L. Wilkinson; Heat Transfer in Cosmetic Manufacturing Processes, by V. O. E. Bryant; Corrosion of Iron and Aluminum, by K. F. Lorking and J. E. O. Mayne;

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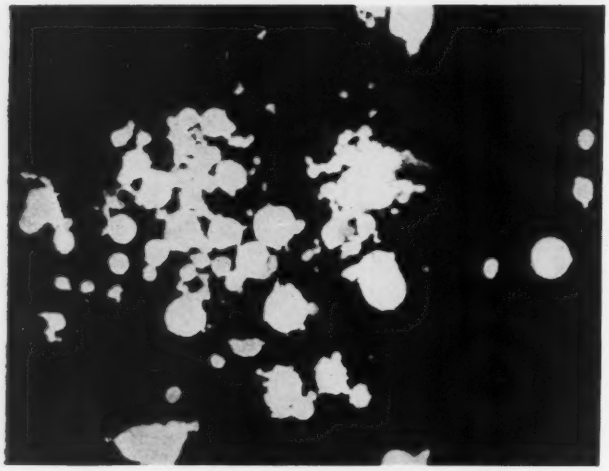

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Bibliography Available

FOR ADDITIONAL INFORMATION AND PRICES, WRITE:

J.T.Baker CHEMICAL

J. T. Baker Chemical Co.
Phillipsburg, New Jersey

Filtration Fundamentals, by D. M. Wyllie; The Present State of the Cosmetic Industry, by W. S. Bullough; Recent Advances in the Biology of the Skin, by F. J. Ebling; Cosmetics, Allergy and Skin, by J. C. Feinberg; Cosmetics as a Factor in Civilization, by R. H. Marriott.

Warner-Lambert "Research Fellow"

"Research Fellow" is a new position and title to be given to make advancement possible for those scientists of the Warner-Lambert Research Institute whose future or ambitions do not lie in the administrative field. Dr. Earle L. Arnow, president of the Institute, explains the move: "Opportunities for advancement for scientists of unusual caliber today are often limited to a move into the administrative field of their specialty, (which) may reduce the scientist's time in the laboratory and thereby deprive research institutions of the benefit of his greatest skills . . . We feel the position of Research Fellow will open the way to promotion and recognition of scientific achievement to those whose experience and accomplishments have made them eligible for advancement."

The Warner-Lambert Research Institute, formed in the Spring of 1958 by the Warner-Lambert Pharmaceutical Company, combines and coordinates research for the company's ethical and proprietary drug divisions, and for its cosmetic and toiletry operations.

Parke, Davis Facts

While one would not be apt to consider Parke, Davis as an antibiotic house, 36 per cent of their sales for 1958 were in their exclusive antibiotic, Chloromycetin. P. D. President Harry J. Loynd told the New York Society of Security Analysts last month that sales of this one product for 1958 totaled $62 million, out of total company sales of $172 million. Sales of the antibiotic were up 20 per cent from 1957. In addition, an additional $35 million worth of chloromycetin was sold in countries in which P.D. has royalty contracts, including Japan, France and Italy. (And this is the drug that was flat on its back a relatively few years ago through misuse by doctors.)

Vitamin products are second in volume, antihistaminics are third, and polio vaccine is fourth. The company has 619 products, against 2,000 fifteen years ago. Total number of packages is 1,231, against 6,000 fifteen years ago. These are broken down into specialties, 155, representing 350 packages; other pharmaceuticals, 340, representing 636 packages; and surgical dressings, 124, representing 240 packages. About 75 per cent of P.D. pharmaceuticals are sold on prescription, and 25 per cent over the counter.

Sales and medical servicemen number 897 in the U. S., 75 in Canada, and 598 overseas, for a total of 1,570 men informing physicians, clinicians, hospitals, and scientists on P.D. products. These men held 1,150,000 interviews in one year in the U. S. and Canada, and 715,000 overseas. In the U. S. the company deals with about 170,000 physicians; sells to about 30,000 drug stores; to about 8,000 hospitals; 400 wholesalers; and deals indirectly via the retail trade with about 20,000 veterinarians. About 67 per cent of 1958 sales were in the U. S., 33 per cent overseas.

P.D. research budget for 1958 was in excess of $8 million, up $1.5 million from 1957, and for 1959 it will be "in the range of $9 million." At the end of 1958 there were 617 scientists and other employees devoting full time to research in the U. S. and England, up 313 from 1950. This is the greatest rate of increase in any of the company's functional categories. The sales force increased about 43 per cent, and all other employee groups about 16 per cent.

In 1958 the company screened approximately 40,000 substances for antibiotics. Of this 40,000, only 200 justified further study, of which only 30 were manufactured for trial, and finally only 6 of these wound up in the department of clinical investigation. As to research in the central nervous system — covering hypnotics, anticonvulsants, tranquillizers, relaxant drugs, anti-ulcer agents, and anesthetics—the company has 10 products in one stage or another of clinical development. A substantial part of the research budget is being spent on cancer, as well as on cardiovascular diseases, and steroids and hormones. The company has doubled its staff of medical men in the clinical investigation department to evaluate drugs coming on the market and to determine better and new uses for drugs already on the market. At present 25 products are being evaluated.

The company has before the government for approval Quadrigen vaccine, which is a combination immunization against tetanus, diphtheria, pertussis, and polio. As regards the polio vaccine, the company is having difficulty in manufacturing enough to meet the demand. Research is being conducted on a prophylactic agent against the Echo virus which causes a disease similar to polio, which it is hoped can be incorporated with the polio vaccine. The amount of polio vaccine sold in 1958 was about the same as in 1957, but 1958 prices received were 40 per cent less.

The company has developed a vaccine for the common cold which incorporates three strains of viruses, but hopes to have seven strains available for commercial use sometime in the early part of this year. Research is also being conducted for a vaccine for measles, as well as for mumps.

In 1959 the company will build new plants in Belgium, Italy, and France. Also, plans are being laid for plants in Spain and South Africa. Additions are to be made to plants in Brazil, Argentina, and Mexico, and a plant is scheduled for India. A plant in Bogota, Colombia, went into production last month, and a Puerto Rico plant will be producing this year.

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Upjohn Facts

Products of The Upjohn Company fall into four classifications: antibiotics, steroids, nutritional (vitamins and hematinics) and other pharmacological products, according to the prospectus issued in connection with the recent public sale of the company's stock. During the first nine months of 1958 antibiotics accounted for 19 per cent, steroids 24 per cent, nutritional products 20 per cent, and other pharmacological products 29 per cent. Fine chemicals, veterinary and agriculture products accounted for the balance. No single product accounted for as much as 15 per cent of sales.

Offering a comprehensive line of antibiotics, Upjohn's most important antibiotic products are Panabla capsules and granules—a combination of tetracycline and novobiocin, the latter drug being discovered by Upjohn. The company produces neomycin for its own use and for sale in bulk.

One of the largest makers of cortical steroids, Upjohn also produces male and female hormones, progerterone, posterior pituitary extract, and epinephrine. Manufacturing cortisone, hydrocortisone, prednisone and prednisolone, the company is now making 6-methyl prednisolone (Medrol).

Important nutritional products are Unicap, Zymacap, Zymadrops (for infants), Unicap Therapeutic, Solu-B (injectable vitamins), and Unicap M (with minerals). The company also produces folic acid for its own use and for bulk sale.

Important products included among the other pharmacological products are Cheracol, a cough syrup; Citrocarbonate, an antacid; Kaopectate, for diarrhea; Pamine, for ulcers; Gelfoam, for surgical bleeding; Heparin, an anticoagulant; and Reserpoid, a brand of reserpine. In 1957 the company began the manufacture of Thorexin Cough Syrup and Thorexin Cold Capsules for Gillette.

Orinase (tolbutamide) tablets, the first effective oral treatment for diabetes is now being used by an estimated 300,000 diabetics in the U. S. The products, developed in Germany by Farwerke Hoechst AG, is sold in this country by Upjohn under an exclusive license. The effect of competitive products of this type on sales of Orinase, or protection available to Upjohn against such products cannot be evaluated.

Upjohn's domestic force of detail men, totaling 1,080, is one of the largest. Domestic customers are served from 18 branches. Approximately 3 per cent of total sales in 1957 were bulk products.

In 1957 Upjohn spent $11,600,000 for research. Approximately 54 per cent of the total sales for 1957 were of products less than five years old. Extensive research programs have been carried on for years and continue to be pursued on hormones, particularly steroids, nutritional products, hematinics, antibiotics, chemotherapeutic agents, and antiviral agents. Similar programs are directed at creation of agents for treatment of heart disease, cancer, hypertension, diabetes, mental diseases, arthritis, and degenerative diseases.

Licenses under patents and know-how in 1957 accounted for $759,524 royalties received, and $1,056,615 royalties paid. For the first nine months of 1958 royalties received totaled $469,363, and royalties paid out totaled $1,316,866.

Paid President for PMA

The board of directors of the Pharmaceutical Manufacturers Association has approved a plan for the appointment of a full-time paid president, with Dr. Austin Smith, former editor of the *Journal of the American Medical Association* as the first appointee.

Aside from the fact that the presidency of the PMA is now too demanding for any industry member, lies the all-important fact that the Association is attempting to widen its scope from scientific, technical, legislative, production and other matters to the point at which it would be actively engaged in properly interpreting the industry and its problems to the public.

The appointment of a paid president would not interfere with the PMA Washington set-up of Dr. Karl Bambach as executive vice-president, or the New York office with Dr. J. O'Neill Closs as administrative vice-president. The new president would be the "voice" of the Association, and would interpret the drug industry to Congress, government agencies and the public, and develop an over-all industry public information program.

Under the plan, the president-elect, William Graham of Baxter Laboratories, would become chairman of the board.

J. & J. Buys McNeil Labs.

McNeil Laboratories, Inc., Philadelphia, was acquired by Johnson & Johnson on January 15, through an exchange of 622,008 authorized, but previously unissued shares of Johnson & Johnson common stock, par value $5.00 each, for all the capital stock of McNeil. Johnson & Johnson common stock having a market value of about $55.00 per share at the time of the acquisition, the price paid for McNeil figures out to be slightly more than $34 million.

Founded in 1879, McNeil Laboratories has currently been under the direction of Robert L. McNeil, Jr., and Henry S. McNeil, who became board chairman and president, respectively, following the retirement of their father, R. Lincoln McNeil, who retired from active participation in the company several years ago. Both Robert L. McNeil, Jr., and Henry S. McNeil have been elected members of the board of Johnson & Johnson.

Johnson & Johnson Chairman Robert W. Johnson says that the acquisition of McNeil is considered "an important step in Johnson & Johnson's long-term program for the development and marketing of medicinal, surgical and diagnostic products for the medical profession. McNeil's fine management has

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built research, manufacturing and marketing organizations which complement the Johnson & Johnson corporate family. McNeil's products do not compete with any products marketed by Johnson & Johnson and its affiliates."

McNeil's principal products are described as prescription pharmaceuticals in the sedation, skeletal muscle relaxant, and antihistamine fields.

More Money for FDA

Food and Drug Administration funds requested in the President's budget for the next fiscal year total $13,210,000, an increase of 6.9 per cent more than current spending because of new duties in enforcement of the food additives law recently enacted. The total request for the Department of Health, Education, and Welfare—of which the FDA is a part—totals $3,176,000,000, which is 1.6 per cent below the estimated current spending. The present request is 12 per cent higher than the request for the current year, to which Congress added many millions.

Other parts of the HEW budget are: For medical research, $294,279,000, the same amount Congress voted last year after raising the President's request of about $211 million. Hill-Burton hospital construction funds have been cut from $186.2 million to $101.2. This is said to be enough to take care of population growth and attrition but not enough to reduce backlog of needed construction. Grants for health research facilities are trimmed from $30 million to $20 million. For the needy aged, blind, totally disabled and dependent children, $2,033,500,000, or $58.7 million more than current spending is requested. An increase of $18 million to a total of $89 million is requested for (Medicare) military dependents' medical care program of the armed forces. Veterans Administration hospital and domiciliary program calls for $890,804,000, which the President says would allow care for an average of 140,800 beneficiaries a day. Current spending is around $862 million. No funds are requested for assistance to medical schools, but this may come later.

Glycerine Research Awards

Glycerine Research Awards for the seventh year went to Drs. L. A. Goldblatt and R. S. McKinney of the Southern Utilization Research and Development Division of the U. S. Department of Agriculture at New Orleans for synthesis and examination of the unique physical properties of tung oil monoglycerides; to Dr. Dymtro Buchnea, assistant professor of chemistry at the University of Toronto for research on the analysis, synthesis and chemical structure of unsaturated glycerolphosphatides and related compounds, natural derivatives of glycerine found in living cells; and to Dr. Herman B. Wagner, director of chemical research for the Tile Council of America, for improved glycerine-containing mortar for setting ceramic tiles.

Drs. Goldblatt and McKinney, who received first prize of $1,000 and a plaque for their work on tung oil monoglycerides, have shown that these products have great potential use in agricultural sprays where they function as fugitive emulsifiers.

Dr. Buchnea, who received second prize of $300 and a plaque certificate, has synthesized compounds which have proved of great value as reference compounds for chemical, biological, biochemical and medical investigations in the elucidation of the structure and configuration of the naturally occurring phosphatides.

Illness Survey

On the average, each American had 2.6 attacks of acute illness from July 1957, through June 1958, according to the National Health Survey. The figures show a total of 437,886,000 illnesses and injuries severe enough to require medical attention or restriction of activity. The rates by age groups ranged from four illnesses each for children under 5 to 1.6 each for persons 65 and older. Over all, women had a slightly higher rate—2.7 acute illnesses—than men who averaged 2.5. Chronic conditions were not included, even if they started in the period covered. Days lost from work totaled 356,500,000, and days lost from school, 273,200,000 during the year.

Because of epidemics of Asian flu, respiratory tract ailments accounted for 65 per cent of all acute illnesses. Because Asian flu outbreaks made 1957 an unusual year, 36 per cent of all acute illnesses started during the last three months of 1957. Diseases of the upper respiratory tract, including the common cold, acute sinusitis, tonsilitis, and laryngitis, accounted for about 35 per cent of all acute conditions tabulated. A second category of respiratory ills, including influenza, pneumonia, bronchitis, and pleurisy, made up 29.9 per cent of the year's total.

Slightly more than half of all conditions involved bed-disability days, and 62 per cent involved medical attention. The injury rate was highest in the 15 to 24 year group—35.8 per hundred.

Fair Trade Bills Introduced

The Federal fair trade bills have again been introduced. What the chances of one of these bills being enacting this year are, of course unknown, but the battle will go on. The Harris bill, sponsored by the Bureau of Education on Fair Trade, is one of the bills. The other is the Boykin bill, backed by the American Fair Trade Association and the Quality Brands Associates of America. It has now been dubbed the Quality Stabilization Bill.

Some 1957 Drug Totals

The output of tranquilizers in 1957 totaled 964,000 pounds, according to the U. S. Tariff Commission. Of this total the production of the Miltown, Equanil drug amounted to 759,000 pounds, with sales given at

740,000. However, this does make this latter product the most important, nor can anyone figure out from these totals which is most important. The wide variance in the dosage of the three leading tranquilizers makes this impossible. Dosage per day of Miltown is about 800 mg. or more, that of Thorazine, about 40 mg., and that of reserpine, only from 0.1 to 1 mg. Reserpine production was 318 pounds.

Production of vitamin A from all sources totaled 274,000 pounds; thiamine derivatives, 294,000 pounds; riboflavin (human), 140,000 pounds, animal and poultry, 265,000 pounds; pyridoxine, 37,000 pounds; B_{12} (all grades) 790 pounds; irradiated ergosterol (D_2) 21,640 billion USP units; niacin 2,204,000 pounds; niacinamide, 825,000 pounds; ascorbic acid and derivatives, 3,429,000 pounds; pantothenic acid and derivatives, 767,000 pounds.

Barbiturate production totaled 755,000 pounds; steroid hormones, 52,000 pounds; sulfa drugs, 3,643,000 pounds; antihistaminics, 295,000 pounds.

Antibiotic production included 6,000 pounds of bacitracin; 582,000 pounds of dihydrostreptomycin; 198,000 pounds of streptomycin; 24,000 pounds of neomycin base; 694,000 pounds of penicillin salts; 404,000 pounds of tetracycline. The combined output of chlorotetracycline, chloramphenicol, and oxytetracycline totaled 290,118 pounds.

Perfume and Flavor Materials

Production figures for flavor and perfume materials for 1957 given by the U. S. Tariff Commission reveal the following totals: eugenol, 142,000 pounds; methyl salicylate, 3,477,000 pounds; phenylethyl acetate, 124,000 pounds; phenylethyl alcohol, 1,559,000; citral, 109,000 pounds; citronellal, 269,000 pounds; dl-citronellol, 359,000 pounds; coumarin, 457,000 pounds; geraniol, 417,000 pounds; hydroxycitronellal, 244,000 pounds; ionones, 329,000 pounds; linalool, 107,000 pounds; linalyl acetate, 122,000 pounds; synthetic menthol, 445,000 pounds; methylionones, 372,000 pounds; heliotropin, 198,000 pounds; rhodinol, 17,000 pounds; synthetic sweeteners, 2,060,000 pounds; terpineols, 2,544,000 pounds; ethyl butyrate, 179,000 pounds.

Schering Buys Veterinary House

Schering Corporation has acquired American Scientific Laboratories of Madison, Wisconsin, producers of veterinary biologicals, pharmaceuticals, and pesticides with annual sales of about $1.5 million. It will be operated as a wholly-owned subsidiary of Schering, continuing at its present location and under its present management which includes Hubert D. White, president, and his sons Kenneth T. White, executive vice-president, and Dr. Philip G. White, vice-president and director of research. The company was acquired through the issuance of Schering common stock for all the outstanding common and preferred stock of the acquired company.

Seek Law to Sell General Aniline

Permission for the Office of Alien Property to sell its holdings of 98 per cent of the stock of General Aniline and Film Corporation will probably be requested by legislation to be enacted by Congress and signed by the President, according to a recent statement by Attorney General William P. Rogers. The idea is to put the shares on the market and then reserve some of the proceeds to cover any eventual winning claim by Interhandel, a Swiss holding company which claims ownership and which has been fighting the case in the courts for the past ten years. The claim is that the stockholders were non-enemy Swiss, not German, and hence the seizure was illegal. While in the past the Swiss company resisted the idea of monetary payment, it has recently indicated that this would be satisfactory. With certification of GAF ownership, bidding for its stock might be quite active. The company has assets of $60 million or more, but Bache & Co., New York investment house recently estimated that $84 million would be a fair price. Bache has organized a syndicate interested in buying the company and dividing up its three main lines—Ansco film and photographic products, the dye and chemical division, and the Ozalid division, which makes office copying machines and papers.

The sale of the stock in the company would be by competitive bidding.

Gillette Research in England

The Gillette Company has established a new research laboratory in Reading, England. Dr. Milton Harris, vice-president and director of research for the company, recently spent a month in Reading setting up the new laboratory.

Doctors Come to Cutter's Defense

The American College of Physicians has joined Cutter Laboratories in appealing the awarding of damages for polio infections said to result from use of Cutter vaccine even though Cutter was declared not negligent. In its brief it points out that "the creation of an absolute liability concept would greatly impair future progress. The introduction of new products and procedures would be stifled and mankind would be denied the continual advancement of medical science. . . . We believe that when a biological is made according to strict government specifications and complies with the best scientific productive knowledge available and when the manufacturer is absolved of all possible negligence by the jury, as the defendant was, no liability should be incurred when an injury occurs because of the user's own peculiar susceptibility or because of insufficient scientific knowledge at that time. To create such an absolute liability would be to saddle the world of medical science with an unfair burden."

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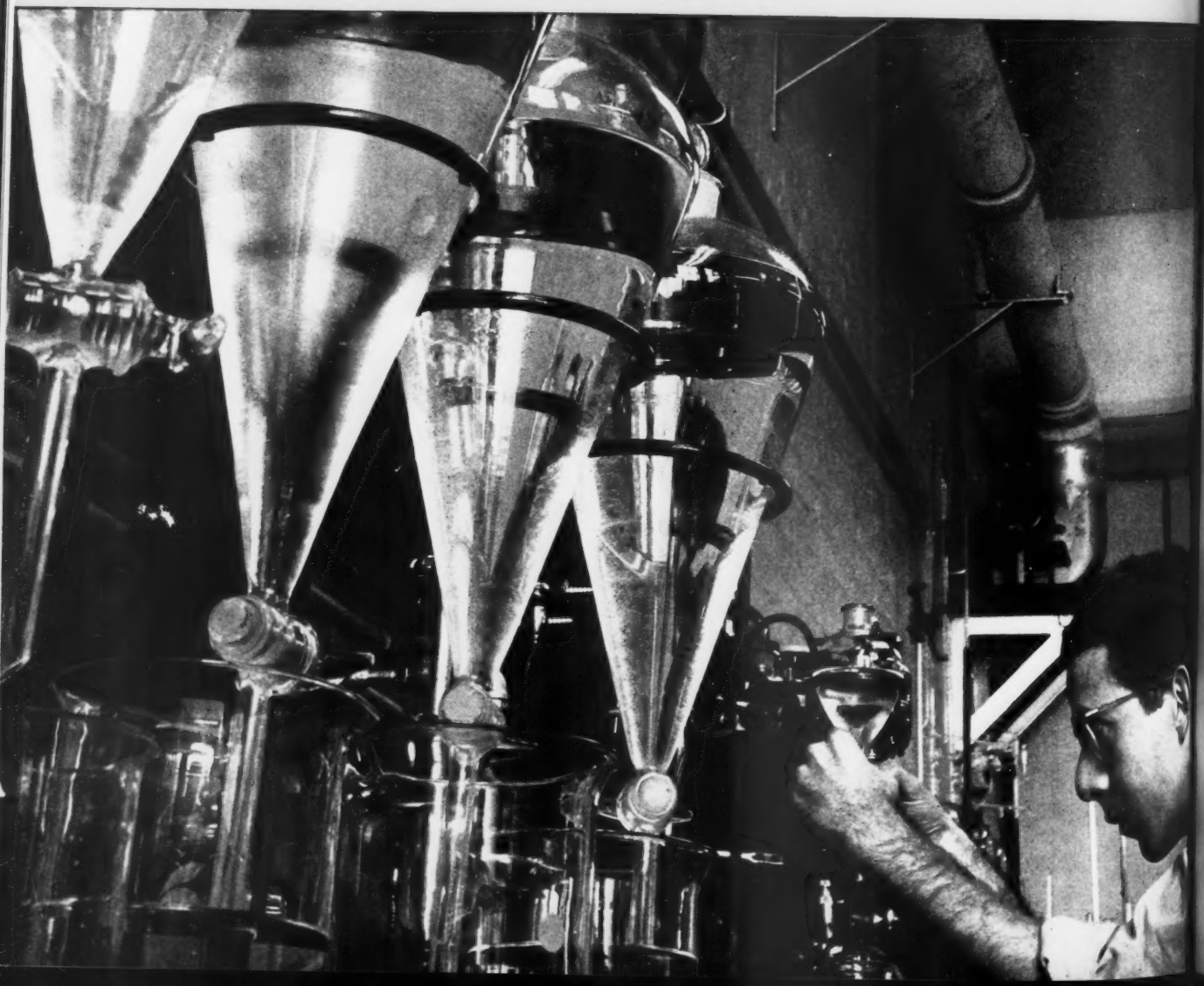

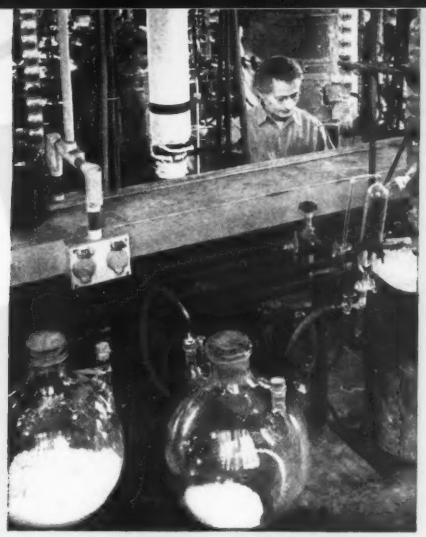

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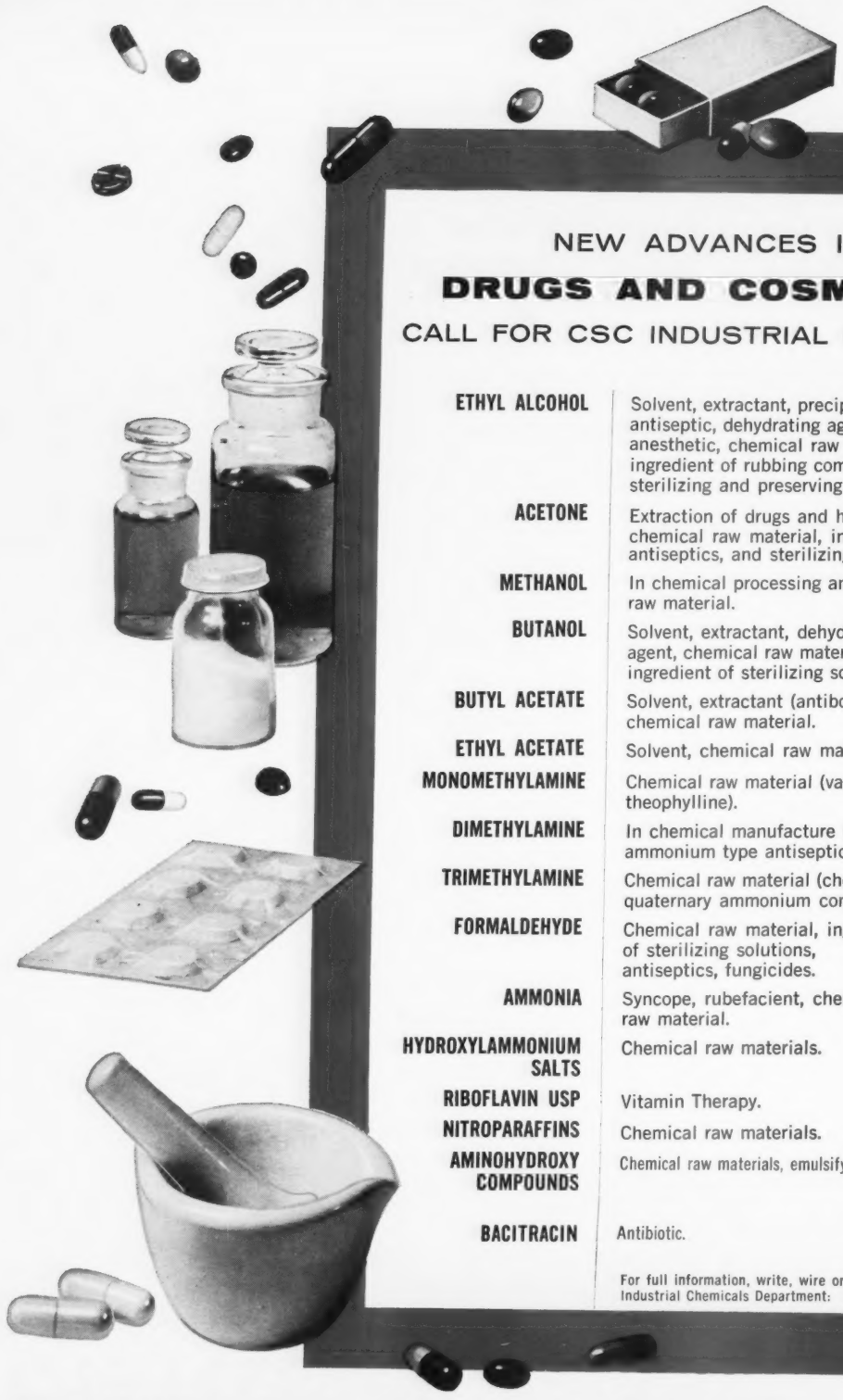

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THE VETERINARY AND ANIMAL HEALTH

BY JACK M. SMITH, SCHERING CORPORATION

Ten years ago the veterinary drug market was looked at with little more than a passing interest by many of the major pharmaceutical companies. Today there is a sharply contrasting situation. Now these same companies are either engaged in marketing veterinary products or are actively seeking an entrance to this "newly discovered" market.

Manufacturers of human pharmaceutical products have acquired or are endeavoring to acquire established veterinary houses to serve as outlets for their products. Cutter Laboratories, for example, bought Haver-Glover and Ashe-Lockhart, two acquisitions that projected Cutter into the veterinary market with both a pharmaceutical and a biologicals line. Other purchases have seen Jensen-Salsbery go to Vick Chemical, Fort Dodge to American Home Products, and Corn States Serum Company of Omaha to Eli Lilly. Acquisition of these veterinary drug houses brought their new owners ready-made distribution outlets and a transference of firmly established relations with the veterinary profession.

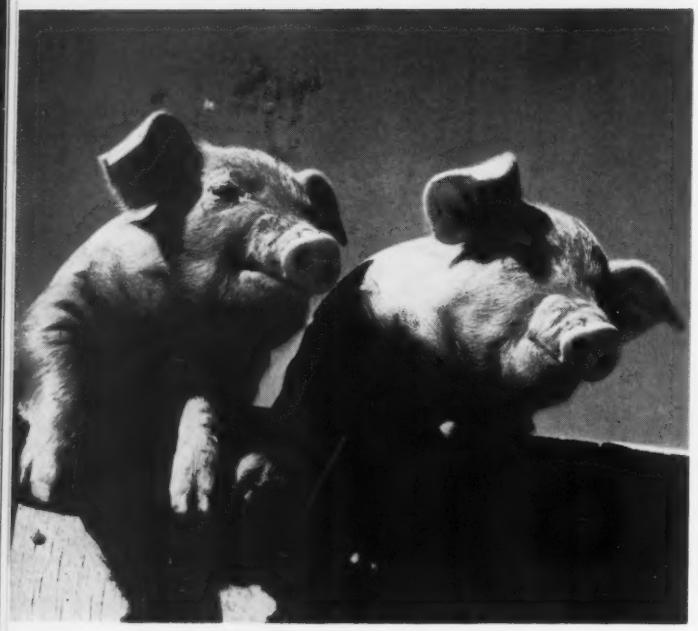
Pharmaceutical Industry and Animal Drugs

From the manufacturer's point of view, veterinary drug products fall largely into three major categories: (1) ethical preparations advertised and sold only to veterinarians; (2) proprietary preparations for over-the-counter sales in drug and feed stores; and (3) feed supplements that include both ethical and proprietary products.

Some large pharmaceutical companies such as Squibb, Division of Olin Mathieson; Lederle Laboratories, Division of American Cyanamid; and Pfizer Laboratories have adopted a dual sales technique of selling to the farmer as well as to the veterinarian. Other major houses in the veterinary field—Schering Corporation, Allied Laboratories, Pitman-Moore, Cutter Laboratories, Ciba and others—have established an ethical policy that makes products available to the profession only, either directly or through the company's professional service representative.

Animal Health Products in Pharmacies

In recent years the animal health departments of pharmacies have become major outlets for veterinary drugs, although sales of animal medications by veterinarians continue to show a definite upswing in many sections of the country. This trend has been confirmed by 63.1 per cent of small-town pharmacists reporting in an *American Druggist* survey that ani-



EWING GALLOWAY PHOTO

mal medication sales by veterinarians have increased during the past two years.

Veterinary Marketing Data Needed

Unfortunately, there has been little published data on the ethical veterinary market—no backlog of information such as exists in the human pharmaceutical field and the sort of data that has been gathered by a competent, objective source. Perhaps this lack of workable information is attributable to the late entry of the major pharmaceutical houses into the veterinary market. Apparently the small companies that had been servicing veterinarians over the years were satisfied to "fly by the seat of their pants."

At the present time, market information is one of the most urgent needs of those concerned with the veterinary products market. The stepchild is fast coming of age!

A "Natural" for Market Expansion

The current trend among large corporations to diversifying their marketing activities probably explains the broadened industry-wise interest of pharmaceutical manufacturers in the veterinary and animal health market. Major houses apparently realized finally that with little increase in capital investment a lucrative market, served for the most part by small companies with extremely limited research facilities, was ready for tapping. Moreover, this market strongly invited modern marketing techniques—the absorbed companies had never explored it with large-scale, high-pressure product promotion or any other type of dynamic selling.

New Drugs Affect Veterinary Drug Market

Biologicals accounted for a large slice of the animal health dollar up to a few years ago. The advent of penicillin, however, changed this dollar-distribution picture. Just how essential penicillin and other antibiotics became to veterinary practice was demonstrated in a 1956 *American Druggist* survey, which reported that over 50 per cent of drugstore sales for human labeled products for veterinary use were credited to antibiotics. The new corticosteroids, introduced in 1955 under human label, proved to have wide veterinary application with a proportionate effect on the veterinary product sales breakdown. More recently tranquilizers, the phenomenon of modern medicine, have become a valuable therapeutic tool for veterinarians who are using them with great success in treating both large and small animals, from cattle on the Iowa feedlots to poodles on Park Avenue.

Increased emphasis by major pharmaceutical houses on veterinary research *per se* points to forthcoming new products for use in the rapidly expanding field of veterinary medicine.

Veterinary Medicine and Our Well-Being

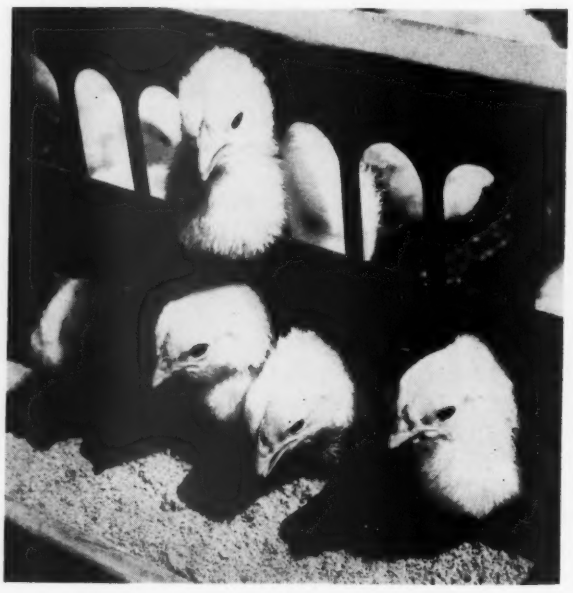
The economic importance of veterinary medicine to the nation's well-being is reflected in our annual animal losses amounting to approximately a billion dollars. The impact of these losses can be better visualized from the following estimates of America's steadily increasing yearly food requirements:

(1) 151 million more pounds of beef, requiring a quarter million extra steers averaging 1,000 pounds each,

(2) 176 million more pounds of pork, requiring 1½ million 200-pound hogs,

(3) 73¾ million more pounds of chicken meat, requiring 24½ million 3-pound fryers,

BLACK STAR PHOTO



(4) 14 million more pounds of turkey, requiring 800,000 20-pound birds,

(5) 84 million dozen more eggs, requiring 5½ million extra hens, and

(6) 112½ million gallons more milk, requiring 180,000 additional dairy cows.

New and Better Drugs Needed

Steps taken in the past ten years to minimize livestock and poultry losses and to meet ever-increasing national food requirements are indicative of things to come. Agriculture continues with forward-looking changes that perhaps were stimulated by the demands for the war years. Larger units, corporate farming and livestock operations have proved their value as profitable business ventures. This emphasis on bigness means greater operating efficiency and lower production costs. Cardinal examples are the huge cattle and swine feeding operations, pig hatcheries, broiler production and other large-scale operations involving all or nearly all domestic food-producing animals. These operations point directly to an increasing need for new and better drugs as a means of increasing and maintaining efficiency.

Livestock producers do not underestimate the implications of the loss hazard of disease, or the intrinsic value of preventive medicine. Indeed, future changes in concepts of veterinary practice may hinge on this logical approach to a perennial problem. Certainly there will be more emphasis on disease prevention as a herd problem and less on the salvage of individuals.

Prognosis Now More Favorable

A decade or more ago, drugs to treat a great many animal diseases with any expectation of satisfactory results were not available. Animal drug sales, for example, were largely for tonic powder, serums and virus, bacterins and dip, chicken tablets and powders, usually purveyed directly to farm or ranch. With this meager store of medicinals at their command, veterinarians were often forced to stand by and watch sick animals die, or at best trust them to nature's curative powers.

Recent years, however, have seen the introduction of newer and better vaccines, serums, antibiotics, improved insecticides and anthelmintics, as well as such modern therapeutic agents as the "Meti" steroids and tranquilizers.

Today's Husbandmen Is Better Informed

Today's armamentarium of veterinary drugs means that farmers and stockmen are better informed and thus more likely to seek aid from the veterinarian in treating sick animals and poultry. This broader knowledge alerts them, too, to the fact that farm creatures are susceptible to more diseases than were recognized by the older generation.

Moreover, an educational program shared by mass publications media, government agencies and commerical houses continues to expand the farmer's knowledge of frequently encountered diseases of cattle and poultry. For example, mastitis in dairy cows, a disease causing severe losses in milk production, has been widely discussed in farm journals and other publications and on the farm radio.

DEVANEY PHOTO

Finally, to the manufacturer of veterinary pharmaceuticals and kindred needs, the present-day combination of an impressive array of animal drugs plus an informed market offers a sales potential of unprecedented and prophetic proportions.

Pet Population's Growth

Closely paralleling increased interest in and constant search for improved means and methods of managing problems affecting the health of food-producing animals, has been the astounding growth of America's pet population.

All-Pets Magazine, a monthly published largely for breeders and fanciers, has correlated statistical data resulting from a survey of 14 leading consumer magazines. The survey revealed that 55.6 per cent of all American families have pets of some kind. Numerically the percentage represents an unbelievable 76 billion pets with the ubiquitous dog and cat accounting for over 50 million, and everything from exotic birds to skunks and monkeys completing the figure.

Solicitude on the part of American owners for the health and comfort of these pets is a phenomenon of our way of life. This protective concern is reflected in the markedly increasing number of graduate veterinarians who, in recent years, have gone into small-

(*Continued on page 238*)

PERFUMES FOR AEROSOLS

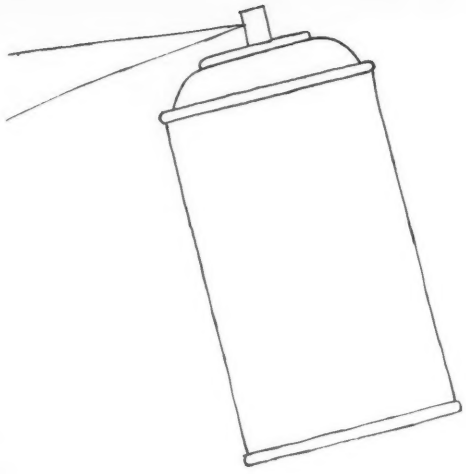
BY JOSEPH H. FEIN
FLORASYNTH LABORATORIES, INC.

Perfume and toilet water aerosol sprays use large amounts of perfume materials. Although the number of individual containers is small compared to that for hair preparations and other products, each container of perfume or toilet water contains a considerably larger proportion of prefume ingredients. And it is here that a number of perfume problems arise. Remarkable as has been the growth of sales of hair sprays, the increase in aerosol perfumes and toilet waters has been comparable. The number of individual containers in this field in 1956 was about 7,600,000; in 1957 it was 17,800,000, well over double the volume.

One of the chief factors in formulating the most effective type of perfume for an aerosol is to use components that are highly soluble in aerosol propellants. Hence, resins of all types must be used with great care, to avoid difficulty with respect to solubility. However, it is not true that they must necessarily be completely avoided. So, too, the use of musks, both natural and synthetic, as well as such crystalline substances as heliotropin, vanillin, coumarin and many others, must be considered with caution. Balsams, civet, castoreum and a number of other valuable fixatives must be held suspect for the purpose of aerosol perfumes and toilet waters, unless the final product has been shelf-tested for long periods of time in the container to be adopted and under the identical conditions of packaging.

All of the above components can and do sometimes precipitate out of solution in the presence of liquid propellants. To obtain a fine fragrance of lasting quality without such materials, which may well be considered the keystones of fixation, is no easy matter. The perfumer was not obliged to face this problem until aerosols came into being, yet its answer can be found by an experienced and skilled staff of workers. Sometimes, in place of such resins as opoponax, labdanum and oak moss, to cite three examples at random, it is possible to use the corresponding absolutes when necessary, in such a manner that there is practically little or no alteration of the given fragrance. Great care, however, must be used to determine just what amount of a given absolute is equivalent to a specific amount of a resin in the original formula. This is best done organoleptically. Then the void created by the use of a much smaller amount of the absolute must be balanced, and this is often a difficult part of the problem. Ingredients that are not very soluble in the propellant will precipitate out sooner or later, causing clogging of the valve as well as loss of fixation value of the perfume.

Dipropylene glycol is often added to the perfume oil composition to the extent of from five to 15 per cent. It is an excellent solvent for most perfume ingredients as well as for the halogenated hydrocarbons that are used as propellants. Propylene glycol can also be used for this purpose, but dipropylene glycol is the better solvent.



While it is a serious mistake to dismiss the difficulties involved when perfumes are used in any aerosol, it is no less an error to exaggerate them. Liquid propellants are fortunately very good solvents for most of the usual perfume ingredients, keeping in mind the exceptions which have been discussed above. After the product has been completely formulated with as much thought and experience as possible, the aerosol containers should be filled with the product and then set aside to expose it to the usual routine shelf-testing conditions for a number of months. One of these conditions of great importance is exposure to various temperatures identical to those which would be ultimately encountered in widely different geographical areas. Exposure to sudden changes in temperature is also a value. In spite of the various precepts and theories which have been offered, the proof is in the testing. There is no surer way of establishing the soundness of the formulation than by the long and tedious method of shelf testing.

Most propellants, with the exception of inert gases such as nitrogen, neon and argon, may undergo hydrolysis in the presence of even extremely small amounts of moisture. This explains why they are offered with a moisture content of as low as one part in one hundred thousand. When esters are ingredients of a perfume oil, as is often the case, trouble may develop because halogen acids formed by the possible hydrolysis of the propellant may in turn accelerate the hydrolysis of esters. The fragrance will change gradually as this hydrolysis progresses. In spite of this difficulty, many perfumes in aerosol containers do remain remarkably constant, although they contain essential oils rich in esters.

This apparent paradox brings us to a point on which there is some controversy. A number of aerosol research laboratories, including our own, who are carrying out perfume-aerosol investigations, have taken one by one various perfume ingredients from an extensive list and dissolved each in a given propellant in order to find out its effect on the individual perfume raw material. By this system of screening, some ingredients have been approved, while others have been rejected. This method does not yield the results one would expect from so rigid and painstaking a series of trials. Sometimes a perfume formula containing ingredients which have been definitely eliminated turns out to be surprisingly satisfactory when shelf tested in an aerosol container even for a long period of time. Examples of this are various lavender odors for room deodorants. Many of these are rich in lavender oil, which in turn contains a high percentage of linalyl ester and other esters, yet the fragrance remains unchanged over considerable periods of time. This cannot readily be explained; perhaps the best interpretation is to point out that a perfume ingredient can and sometimes does act as either a catalyst or an anti-catalyst for some other perfume ingredient. However, in general it is best to avoid a preponderance of esters; aldehydes and alcohols seem to be quite stable in the presence of halogenated hydrocarbons.

Before leaving the subject of shelf testing, we wish to point out that even where the final container is made of metal and is therefore opaque, there is an advantage in carrying on some of the preliminary shelf testing in a thick-walled glass test-tube-like container which can be filled and capped in the usual way. Thus it is possible to observe just what goes on within such a container; any changes in color or formation of precipitates will become apparent at once. In the case of metal containers, obviously these are cut open after the proper period of shelf testing to examine the inner lining for any signs of corrosion.

It is contended by some investigators that when perfumes and toilet waters are broken up in a fine spray by the use of aerosols, the differing rates of volatilization of the different perfume ingredients are brought closer together. According to this view, the aerosol fragrance actually differs from the one originally marketed in a glass bottle, because there is no longer any top note or residual note in evidence, but rather one uniform odor. This effect may be corrected, it is said, by increasing the ratio of anhydrous alcohol to propellant in the mixture. On the other hand, some formulas for perfumes omit the alcohol entirely; the perfume oil is dissolved in the liquid propellant and the final product contains only these two components. When the perfume is sprayed, the propellant evaporates with great rapidity so that practically none of it touches the skin. The perfume oil then evaporates on the skin, yielding top note and residual note in much the same manner as a perfume would when taken from a bottle.

For aerosol perfumes, compositions with pronounced top notes are best because in this way the first "whiff" of the halogenated hydrocarbons that comes from the aerosol container has its chemical

(*Continued on page 249*)

THE SKIN GAME

BY ARTHUR H. BRYAN JACKSONVILLE UNIVERSITY, JACKSONVILLE, FLA.

A colony growth on Sabouraud's glucose agar of *Epidermophyton floccosum*, which causes tinea cruris or exema marginatum, that is, ringworm of the thighs and perineal region.

During the summer months, particularly in the southern states, the fungi imperfecti, or hyphomycetes, cause a series of dermatomycoses which, while they respond to modern antifungal preparations, have a tendency to recur, evidently coincident with skin tone, pruritus and the extent of perspiration in affected persons. Other factors limiting effective treatment are the possibility of new contacts, and reinfection coincident with relative humidity modified by the air temperature. Dermatomycoses are clinically less active in temperate climates and during the cold winter seasons.

Etiolological Factors

Skin diseases in the U.S.A. caused by various pathogenic fungi include ringworm, dhobie itch, barber's itch, athlete's foot, eczema marginatum, and mixed hyphomycetic infections. The author suggests the following general outline of hot weather dermatomycoses classified according to recent etiological concepts for druggists' use in the United States.

(1) The trichophytoses

(a) Tinea capitus is scalp ringworm, characterized by gray patches which coalesce and spread and may become highly inflammatory and leave bald patches.

(b) Tinea cruris, or eczema marginatum, is ringworm of the thighs and perineal region. A severe form is known as dhobie itch. It resembles ringworm, but is more intensely inflamed, and therefore harder to treat. This tinea invades the epidermis of the groin, scrotum and genitals, causing an erythema, superficial oozing of serum and accompanying intense pruritus. Later, dry desquamation and drying occur as it progresses.

(c) Tinea sycosis, barber's itch or ringworm of the beard, is no longer common in the USA. The lesions are confined to the beard as hyperemic, pustular patches which involve the hair follicles.

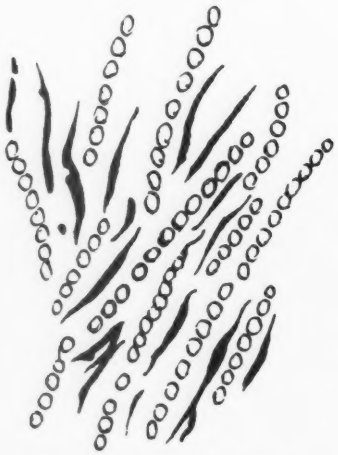
(d) Tinea corporis or tinea circinata is ringworm of the smooth parts of the body. The lesions occur in annular erythematous expanding plaques.

These trichophyta appear microsopically as spore-like chains, with conidia attached to hyphae, usually arranged in clusters. They reproduce mainly by asexual spores. Colony growth is rough and fairly luxurient on Sabourad's test medium.

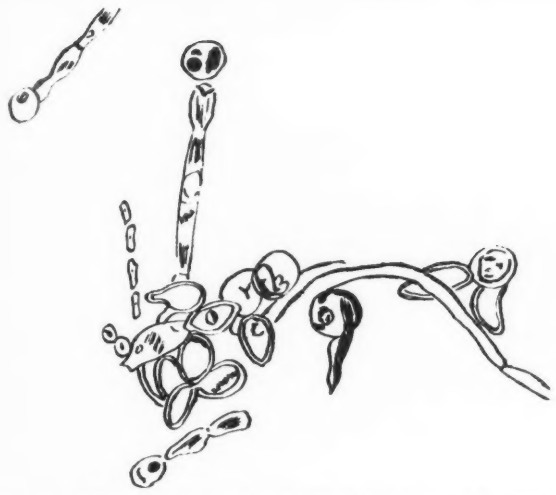
(2) *Epidermophyton inguinale* is another cause of a groin ringworm. Slide examination reveals numerous rounded fuseaux born on aerial hyphae, usually in clusters. Aged cultures have chlamydospores (encysted spores or arthospores). Colonies are greenish buff in color, are aerobic and grow best at room temperature.

(3) Interdigital ringworm, or athlete's foot, is a mixed hyphomycetic infection characterized by interdigital desquamation and a contagious weeping serous exudate. *Monilia*, *Trichophyta* and *Epidermo-*

Epidermophyton floccosum, an individual growth. A severe form of the infection it causes is dhobie itch, which is harder to treat than tinea cruris, being more intensely inflamed.



Individual growth of *Tricophyton tonsurans*, which causes ringworm of the scalp, that is, tinea capitus. It may leave bald spots on the head, following a period of inflammation.



Candida albicans, which causes moniliasis of the mucous membranes, the skin surfaces. In the mouth it is known as thrush, in the vagina, as vaginitis. It is a yeast-like fungus.

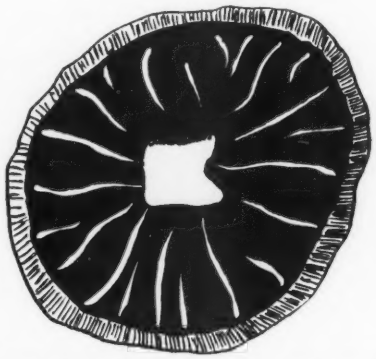
phyta have been isolated from lesions and exudate of typical cases.

Laboratory Diagnosis

Using Sabourad's or Pennsylvania media, especially Sabourad's dextrose agar for skin fungi infections, slide or Petri dish cultures may be made from commercially prepared Difo dehydrated media. In making slide cultures, (1) a tube of cooled melted agar is seeded with the unknown exudate or scrapings from the skin lesions; (2) the slide is placed in a sterile Petri dish containing blotting paper moistened with water to prevent drying out: (3) incubation is carried out at room temperature until satisfactory growth occurs; (4) the cover slip is placed over the growth and examined unstained; and (5) if necessary, the slide is dried, fixed and stained.

Preparing Lesion Material

First, smear pus, exudate, or skin scrapings on a clean slide. Then dissolve the tissue cells and cellular debris with a drop of hot 20 per cent NaOH placed on lesion material. Finally, examine for the presence of pathogenic fungi after waiting from 15 to 30 minutes for the NaOH to act.



A twelve-day growth on Sabouraud's glucose agar of *Trichophyton rubrum*, which causes interdigital ringworm, called athletes foot. *Monilia* and *Epidermophyta* have also been isolated from cases.

The Chemotherapy and Reinfection Prophylaxis of Mycotic Skin Diseases

Among the earlier treatments for so-called ringworm diseases were the iodine unguents. During World War I, goose grease and iodine was a favorite prescription. Potassium permanganate, resorcinol, coal tars with sulfur were prescribed, however with the connotation that effective treatment might require months of constant inunction.

Later, salicylic acid was found to be the fungicidal agent of choice. It was prescribed in from 5 to 10 per cent strength in bases of glycerine, petrolatum, lanolin hydrous or anhydrous, adeps benzoinatus or lard. A favorite prescription compounded by druggists was Rx salicylic acid 10, paraffin ointment 500. Q.X. fiat ounces 11. Inunction BID till relieved. Another prescription frequently filled by the druggist was Rx salicylanilid 5 gm., hyamine 25 per cent, 5 gm., USP hydrophilic ointment, qs. ad. 100.0 gm. Sodium thiosulfate 10. mg., ethyl alcohol 70 per cent aqua qs ad. 120 cc.

Whitfield's solution is still widely used, Rx benzoic acid 7.2 gm., salicylic acid 3.6 gm., ethyl alcohol 70 per cent qs ad 120.0 cc. The ointment substitutes U. S. hydrophilic or white petrolatum USP, aa 30.0 gm. or one ounce, for the alcohol.

Substitutes for salicylic acid are compounds such as sodium caprylate and propionates as in Sopronol powder, ointment or, more recently, in an alcoholic menstruum.

Most recently, triacetin or glyceryl triacetate has been found to be quite effective in the treatment of various dermatomycoses. Its mechanism of action is thought to be slow hydrolysis by skin enzymes, with gradual release of low concentrations of fungicidal acetic acid.

Clinical Observations

While most modern prescriptions contain salicylic acid in liquid, powder or ointment form, the later appears to have the disadvantage that the base (lanolin or petrolatum) tends to keep any moisture in perspiration or exudate from evaporating or drying out. Hence, relief may be only temporary because of the incidence of reinfection where moisture is or may later be present. It appears, therefore, that effective treatment should combine lasting antifungal properties with adequate dehydration. This is the reason why powders are prescribed along with the ointments, expecially in the treatment of athlete's foot. Alcoholic base preparations combine these two actions, and hence appear to be more prompt in their action, with less likelihood of reinfection. Here an important therapeutic desideratum lies in the ability of a group of drugs compounded into a prescription

(*Continued on page 249*)

PROPYLENE GLYCOL AND COSMETICS

BY CHARLES P. McCLELLAND UNION CARBIDE CHEMICALS COMPANY

A description of the ideal cosmetic ingredient is certain to include characteristics like these: colorlessness; odorlessness; compatibility with other cosmetic ingredients; reliability in quality and quantity; chemical stability and non-volatility.

This is an actual description of propylene glycol.[1-3] Now used widely in the formulation of cosmetics and pharmaceuticals, propylene glycol became a staple raw material for the cosmetic industry during the war, when glycerol was in short supply. In addition to possessing all of the desirable qualities of the material it replaced, propylene glycol demonstrated advantages of its own, and soon earned a leading role in cosmetic manufacture.

The chemical formula for propylene glycol is $CH_3CHOHCH_2OH$. Its important physical properties are shown below.

Molecular weight	76.09
Specific gravity at 20/20°C	1.0381
Δ Specific gravity/Δ temperature	0.00073
Boiling Point at 760 mm. Hg.	187.4°C
50 mm. Hg.	116°C
10 mm. Hg.	85°C
Vapor pressure at 20°C	0.08 mm. Hg.
Δ Boiling point/Δ pressure	0.042°C per mm. Hg.
Solubility in water at 20°C	complete
Solubility of water in at 20°C	complete
Absolute viscosity at 0°C	243 centipoises
20°C	56.0 centipoises
40°C	18.0 centipoises
Specific heat at 20°C	0.593 cal./g./°C
Heat of vaporization at 1 atmosphere	304 B.t.u./lb.
Heat of combustion at 25°C	10,312 B.t.u./lb.
Refractive index at 20°C., nD	1.4326

The consistent price level of propylene glycol is, of course, an outstanding advantage for cosmetic manufacturers. It makes practicable the use of high concentrations of propylene glycol in products which require a high percentage of humectant and solvent to guarantee stability and to prolong shelf life. It is chiefly as a humectant and solvent that propylene glycol is valued by cosmetic manufacturers. Among humectants, propylene glycol is unequalled not only as a general solvent, but as an inhibitor of mold growth and fermentation as well.[4]

The function of humectants in cosmetics is now undergoing a re-evaluation, stimulated by recent dermatological investigations of the value of moisture retention by the skin.[5] It is worthwhile to review the action of humectants in formulations. Humectants are hygroscopic plasticizers or conditioning agents used to keep hydrophilic systems soft and pliable. In nature the prime plasticizer is water, but the volatility of water presents problems in the formulation of products. Humectants are added to aqueous formulations to absorb and/or hold water, and the humectant serves as plasticizer mainly through the water thus absorbed or held. At normally encountered relative humidities—above 30 per cent—a major part of the plasticization is due to the water absorbed and held by the humectant. At very low relative humidities the part contributed by the humectant itself becomes dominant. Humectants are incorporated in cosmetic formulations primarily to retard the loss of water from the packaged product. Similarly they might be expected to retard the loss of water from the skin, but recent studies raise some questions about the hygroscopic action of humectants upon the skin surface.[6]

Apparently moisture retention by the skin is aided by emollients ordinarily used in cosmetics. Propylene glycol, incorporated in a formulation, enhances the emollient action of creams and lotions. Through its solvent properties, propylene glycol contributes to an intimate dispersion of these protective fatty substances throughout the aqueous base.

Solvent Properties

The solvent properties of propylene glycol are particularly important in cosmetic formulations. It serves as a solvent for a wide range of materials—cosmetic dyes, essential oils, vitamins A and D, resins, and many organic chemicals. It is completely miscible

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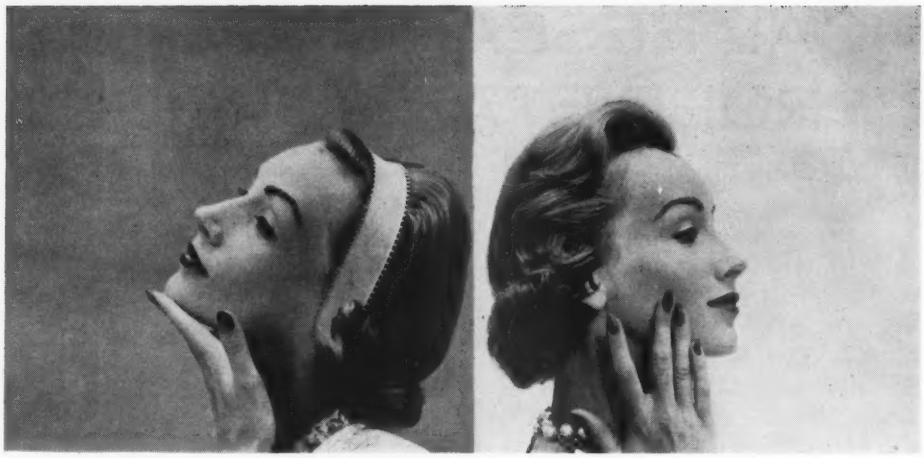


COURTESY A. DE MARHOFF

with many organic solvents, as well as with water, and acts as a mutual solvent. Without marked odor or taste characteristics of its own, propylene glycol does not interfere with the aesthetic appeal of perfumes and flavors.

As an indication of its neutral odor and flavor, propylene glycol is a favorite vehicle for pharmaceuticals, patent medicines, and food flavoring extracts. One of the basic ingredients in modern toothpaste formulation, and in such fragrance products as aftershave lotion, solid cologne, and lotion sachet, propylene glycol provides rapid and complete dispersion of perfume and flavor materials throughout the product. Tables 1 and 2 show pertinent solubility data.

Very low toxicity makes propylene glycol a safe ingredient for products applied to the surface of the body. Dermatological experience indicates it is neither an irritant nor a sensitizer to normal skin and it can be safely incorporated in hypo-allergenic cosmetics, as well as in therapeutic creams, ointments, and lotions. It is particularly suitable for baby toiletries and for cosmetics that are in contact with mucous membrane. Low toxicity, combined with efficacy in dissolving dyes, makes propylene glycol an ideal ingredient for lipstick, eye shadow sticks, cream mascara, and the like.

TABLE 1

Solubility of Miscellaneous Materials in Propylene Glycol

Material	Solubility at room temperature, g./100 g. of glycol
Cassia oil	00
Castor oil	0.8
Clove oil	00
Coconut oil	insoluble
Cottonseed oil	insoluble
Dextrin	slightly soluble
Dextrin (10% in water)	00
Glycol distearate	very slightly soluble
Gum damar	slightly soluble
Hydrous wool fat	slightly soluble
Kauri gum	slightly soluble
Lemon oil	0.81
Linseed oil	slightly soluble
Methyl orange	0.6
Nitrocellulose	insoluble
Nutmeg oil	1.53
Olive oil	insoluble
Orange oil	0.26
Paraffin oil	insoluble
Pine oil	00
Rosin	slightly soluble
Sassafras oil	2.02
Shellac	very slightly soluble
Soy bean oil	insoluble
Sperm oil	insoluble
Sudan oil	slightly soluble
Tall oil	9.9
Tung oil	insoluble
Turkey red oil	3.7
Urea	26.0

TABLE 2

Solubility of Flavoring Materials in Aqueous Propylene Glycol Solutions*

Material	Glycol, Percentage by volume: 100	80	60	40	20
	Solubility at 250° C., per centage by weight in final mixture				
Amyl acetate	00	00	00	1.48	1.34
Bensaldehyde	00	18.97	4.62	1.80	0.82
Cassia oil	00	3.13	0.85	0.69	0.21
Citral	00	0.35	0.17	0.10	0.04
Clove oil	00	1.19	0.26	0.24	0.12
Ethyl acetate	00	00	00	11.65	8.09
Ethyl formate	00	00	00	-	17.45
Ethyl vanillin	14.20	10.80	5.20	1.84	0.79
Eucalyptol	19.90	4.75	1.73	0.35	0.25
Isoamyl formate	00	5.22	4.51	1.68	1.53
Lemon oil	0.81	0.52	0.32	0.13	0.03
Methyl anthranilate	00	00	00	-	-
Nutmeg oil	1.53	0.34	0.17	0.14	0.11
Orange oil	0.26	0.13	0.08	0.06	0.03
Phenyl ethyl alcohol	00	00	00	18.95	3.11
Sassafras oil	2.02	1.21	0.20	0.12	0.08
Vanillin	20.20	20.10	12.60	5.85	2.09

*Data reprinted from *Glycols*, 1952, by permission of Reinhold Publishing Corporation, New York, N. Y.

Dispersing Properties

An important cosmetic function of propylene glycol is its role in emulsification. It expedites the incorporation of water-soluble materials, waxes and fatty acids, and ensures the production of the texture and consistency desired. It lends appeal to creams and lotions by achieving an intimate and stable dispersion of these ingredients. The finished product has a long shelf life. In use upon the skin, it spreads even-

(*Continued on page 250*)

CLINICAL RESEARCH FOR PROPRIETARY PRODUCTS*

BY GEORGE L. WOLCOTT, M.D. MEDICAL DIRECTOR, BRISTOL-MYERS PRODUCTS DIVISION

The article, "Bufferin in the Management of Rheumatoid Arthritis," in the June 4, 1955, issue of the *Journal of the American Medical Association* attracted considerable attention in our industry, not so much for its particular content as for the fact that this was the first time in more than a quarter of a century of its history that our leading medical journal had published favorably on a drug product widely advertised to the public at large.

In a sense we might indicate that this article marked another event, namely the broad recognition that clinical research is indeed a key factor in development and promotion of proprietary products.

Broader utilization of the clinical research technique actually goes back just 20 years to the Federal Food, Drug and Cosmetic legislation of 1938. This is not to suggest, of course, that clinical research was not utilized in our industry prior to 1938. But I am sure many will recall the reluctance with which the transition from passive to active interest in clinical research occurred.

In 1944 the Market Research Unit of Bristol-Myers suggested an antacid aspirin product to meet what appeared to be a significant problem in the proprietary-analgesic field. Survey data had revealed to our Market Research Unit that up to 20 per cent of analgesic users were in the habit of taking an antacid (usually bicarbonate of soda) at the same time.

Clinical research was utilized almost immediately in the comparison of various antacids and the ultimate selection of an antacid system best to meet the product blueprint.

Clinical studies at a midwestern university hospital soon demonstrated that the new product superbly eliminated the stomach intolerance problem present in 10 per cent of the test group. It appeared that a new product might be ready for marketing until some member of the Scientific Group very properly inquired, "How do we know that we haven't interfered with the analgesic effectiveness of the salicylate component of the product?"

Actually we had interfered. But not in the direction considered by our questioner. Because of the obvious inadequacies of methods for measuring pain or pain relief in humans, our Scientific Group elected to initiate blood salicylate absorption rate studies, hoping to establish at least equivalency with the unbuffered aspirin used as control product. The quite unexpected acceleration of salicylate absorption from the new antacid aspirin is now a matter of history. Here clearly is an ideal example of the contribution of clinical research to the development of a product and the elaboration of a major promotional claim.

Now, let me return to the *J.A.M.A.* article and the chronology of events responsible for it.

Because of our established policy in Bristol-Myers Products Division of promoting therapeutic products to the professions as well as to the public, we sought several years ago to find particular indications for Bufferin which might attract professional interest. The field of arthritis appeared to offer great possibilities, not only because of widespread employment of salicylates, but particularly because salicylate-induced stomach irritation seemed to have a higher incidence in this group than in the population at large. It is interesting to note in retrospect that, despite the broad usage of salicylate for almost half a century, up to that time no one had attempted to measure the magnitude of the salicylate intolerance problem.

Two questions immediately resulted: What is the incidence of stomach intolerance of aspirin in arthritic patients and to what extent will Bufferin be useful in eliminating or reducing this problem?

It was obvious that the investigation of these questions would have to be conducted either in outpatient clinics or in a hospital with a relatively large census of arthritis patients. The choice between clinic or hospital was an important one in a study of this kind where subjective reactions were to be graded. In outpatient clinics, patients are seldom seen more often than once a week. We were impressed that evaluations of subjective experiences over the course of a week or more would not necessarily be reliable. If you ask yourself exactly what you had for lunch one week ago today and recall whether you had any distress symptoms following that meal, you will see why such reflections are not reliable. I emphasize this point because too many clinical studies impose memory burdens obviously beyond the subject's ability.

We determined that our study should be conducted in a hospital facility where patients could be interviewed on frequent occasions each day, thus impos-

*Abstracted from an address delivered before the Research and Scientific Development Conference of the Proprietary Association, New York City, December, 1958.

ing little or no burden on their memories, and at the same time permitting objective evaluation by the investigator.

Next came the placement of the project, and I do not hesitate to claim that it is to our credit that we sought and were fortunate in obtaining the cooperation of one of the outstanding arthritis centers in this country.

A detailed protocal was agreed upon with the investigator, with particular emphasis on standard and impartial interviewing techniques. Finally tablets of different products with no gross distinguishing features were provided and arrangements were made that none of the personnel or subjects would be informed of the identity of the test materials until the conclusion of the research study. The final results of that study are now in the written record.

What I have described is perhaps in the category of the ultimate, and a particular design to be em-

ployed only occasionally. Nevertheless, the principles involved are applicable even to the simplest of clinical research projects.

The single most important element of any clinical research project is a careful and complete experimental design. Before you approach any investigator you must have clearly in mind exactly what problem you want studied, the types of subjects needed, the test substances to be employed and the manner in which they are to be used. Specific questionnaires for obtaining information from subjects should be drawn up, as well as other forms for recording of objective data. While you can expect guidance from the clinical investigator in assessing the practicality of the design, it is impractical for him or her to prepare the complete design of the experiment. Bear in mind that as a rule a clinical investigator cannot visualize problems relating to consumer habits and preferences. The physician, for example, is accustomed to adjusting his therapy to the disease condition, whether or not it is convenient to the patient. We in this industry know all too well the futility of attempting to persuade the public to use a product at an inconvenient time almost regardless of proven merit.

In most instances a company's product planning or scientific unit will be able to prepare the experimental design. On some occasions, however, it is helpful to request guidance from the advertising unit as to the manner in which potential study results would be used in claims, and from the legal unit in assessing the adequacy of the experiment design from their viewpoint.

A constant problem in designing experiments is the determination of the ideal number of subjects to be studied. It is vital, of course, to be certain that results of a given study are due to the product alone and not just to chance. Here, the only safe method is to secure independent statistical evaluation not only of the experimental design but also of the study results before they are employed in promotion.

Facilities for conducting clinical research are almost as varied as the products themselves in this complex proprietary industry. Not only do we have pure drugs and pure cosmetics, but also products used as cosmetics that are classified in the drug category because of minor therapeutic claims made in advertising. Facilities generally may be described in two broad categories. The therapeutic group includes: hospitals, clinics, professional schools, industrial dispensaries and private practices. The non-therapeutic group includes: schools, colleges, orphanages, old age homes, institutions (such as prisons) and commercial laboratories.

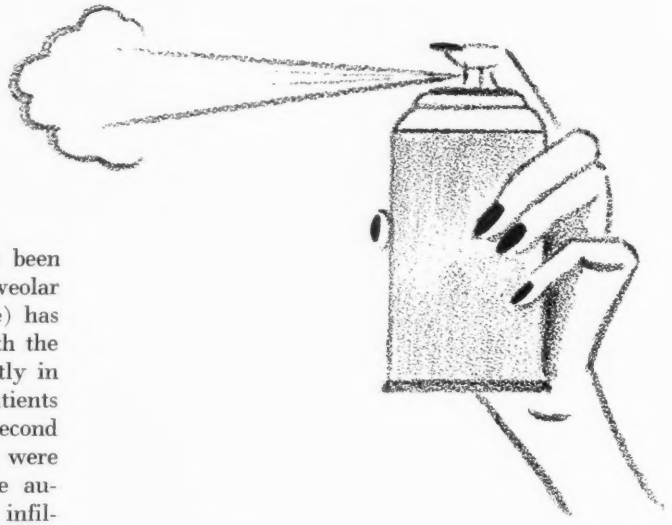
It is self-evident that the particular facility to be approached will depend mainly upon the product and problems involved. Nevertheless, a few general remarks are in order. Hospitals, particularly those affiliated with professional schools, offer the soundest opportunity for comprehensive testing of therapeutic products. Both patients and investigators are available for frequent observations and interviews. By way of contrast, private-practice facilities offer the least opportunity for frequent or prolonged evaluation of drug effects. Industrial facilities are useful in some instances, but cannot be used where recall of subjects for other than treatment purposes may interfere with the operations of the company. Clinics are useful, provided frequent interviews or observations are not required.

In the non-therapeutic group, the commercial laboratories are unquestionably the most efficient for our purposes in the proprietary industry. Utilizing paid subjects on a part-time basis, usually under the

(*Continued on page 251*)

INHALATION OF AEROSOL HAIR SPRAYS*

BY JOSEPH CALANDRA AND JOHN A. KAY INDUSTRIAL BIO-TEST LABORATORIES, NORTHBROOK ILL.



Recently, two pulmonary syndromes have been reported in the literature. One, pulmonary alveolar protemosis (a previously unreported syndrome) has been observed by Rosen *et al.*[1] in 27 cases with the clinical incidence being seen twice as frequently in males as in females. The age levels of the patients were generally 20 to 50 years. Two cases of a second pulmonary syndrome, pulmonary thesaurosis, were described recently by Bergman *et al.*[2] These authors suggested that the transient pulmonary infiltrate present in their two cases was due to the inhalation of hair spray. In animal experiments involving subcutaneous injections of hair spray materials into three guinea pigs, these workers identified cytoplasmic granules in certain tissues which gave a positive staining reaction with the Periodic Acid-Schiff reagent (PAS). It was suggested that this PAS positive staining material represented deposits of macromolecular hair spray materials.

Typical ingredients of hair spray formulations include fluorinated hydrocarbons, ethyl alcohol, perfumes, lanolin and its derivatives, and various resinous materials. Examples of natural or synthetic resinous materials utilized are shellacs, polyvinylpyrrolidone, either alone or copolymerized with vinyl acetate, acrylates, and dimethyl hydantoin formaldehyde.

To explore the suggested relationship betwen pulmonary thesaurosis and hair spray, experiments were conducted to ascertain the effects of chronic inhalation of hair spray in animals.

Two complete and commercially available aerosol hair sprays were evaluated in the investigation. The effects of these two test materials were compared in the study with those produced by two incomplete hair spray formulations which served as "treated controls."

One of the two complete hair spray formulations tested consisted principally of a polyvinylpyrrolidone-vinyl acetate copolymer, an ethyl alcohol vehicle, and a Freon® propellant. The second complete hair spray formulation was essentially a refined, bleached shellac plus an ethyl alcohol vehicle and a Freon® propellant. In addition to these main constituents both complete formulations contained minor proportions of perfumes, emulsifiers, and the like.

Of the two incomplete hair spray formulations tested, one consisted of polyvinylpyrrolidone alone, ethyl alcohol and Freon® propellant. The second incomplete formulation consisted of ethyl alcohol and a Freon® propellant. These latter two formulations were termed "incomplete" because they lacked either a principal ingredient (shellac, polymer) or the minor ingredients (perfumes, emulsifiers).

Procedure

A. Animals and Method of Aerosol Exposure

The experimental protocal followed for all test materials was the same. Young adult guinea pigs, 200 to 300 grams in body weight, were employed as test animals. Groups of 12 guinea pigs equally divided with respect to sex were used in the investigation. The protocal called for four such groups. Two of the groups were "test groups" in the sense that they were used to evaluate the two complete commercial hair spray formulations. The two other animal groups constituted "treated control" groups, one group being employed to evaluate the "PVP-vehicle-propellant" formulation while the other served to investigate the "vehicle-propellant" formulation.

During the investigational period all guinea pigs were maintained on a standard laboratory guinea pig diet, which, along with water was permitted *ad libi-*

*From the Proceedings of the Scientific Section, Toilet Goods Association, Number 30, December 1958.

tum. The animals were housed in large stock cages, six animals of the same sex and belonging to the same experimental group being allotted to a single cage.

The aerosol exposures were conducted in 9″ x 12″ x 9″ exposure chambers. A three-quarter inch square vent was provided on one side of each exposure chamber through which the aerosols could be introduced.

The animals to be exposed were placed in individual wire stocks and then placed in an exposure chamber through the hinged top section, which was then closed off and sealed. Aerosol was then introduced into the chamber through the exposure vent, the aerosol can fitting snugly into the aperture provided for it. Aerosols were sprayed in directly from the original containers for a stop-watch-timed period of exactly 15 seconds. The aerosol can was then removed from the vent and the latter immediately sealed. The test animals then remained in the airtight exposure chamber for 15 minutes. The chamber was then opened and the animals were returned to their stock cages.

Three such aerosol exposures were conducted each day, Monday through Friday, on each experimental group of 12 guinea pigs. The exposures took place in mid-morning (at approximately 10:00 AM) and in early and late afternoon (at approximately 1:00 PM and 4:00 PM respectively).

The total volume of each exposure chamber was approximately 16 liters. During the main phase of the investigation (over a 45-day period), three animals were exposed at one time. Since the total volume occupied by the experimental animals was between one and two liters, there remained an air space per animal of somewhere between four and five liters. The test conditions were thus somewhat stringent and were purposely so designed in order to create a fairly concentrated aerosol exposure in a relatively small space.

To illustrate this point the following may be appropriate. On a unit body weight basis, it was calculated that, in each aerosol exposure, the experimental animals were subjected to a mass of hair spray ingredients roughly 200 times that encountered in normal human use. Moreover, this mass of hair spray ingredients was dispersed in a space approximately 1/600 of that where human exposure is likely to occur, such as a powder room 5′ x 8′ x 8′ (320 cubic feet). The relative concentration on a body weight basis was then approximately 120,000 times greater. One additional difference was the time of exposure. The experimental animals remained exposed to the aerosol for a total of 15 minutes whereas it is not likely that the average user of hair spray remains in the use area for a comparable period of time.

B. General Investigational Outline

1. Aerosol Exposure Schedule. An investigational plan was adopted to secure toxicological data on the test materials over 45, 60, and 90 day periods. Principal emphasis was placed on a 45-day study; however, the test was designed so as to elicit at least some information concerning the effects of longer exposures as well.

The investigational outline is shown in Tables 1 and 2. All 12 guinea pigs in each main group were scheduled to undergo aerosol exposure to their respective test materials over a 45-day period. After completion of this 45-day exposure, the surviving animals in each main group were to be sub-divided into three sub-groups, A, B, and C. The "A" sub-group animals were scheduled for immediate sacrifice and terminal pathologic studies. The "B" sub-group animals were to undergo further aerosol exposure. The "C" sub-group animals were to be observed without further exposure. Where all of the original 12 guinea pigs in a test group survived the 45-day period, they could be sub-divided equally, both with regard to number and sex, into sub-groups of four animals each. If this were not the case, then attempts would be made to place two males and two females into the "B" sub-group first; then the "C" sub-group would be similarly constituted, and any remaining animals would be placed into the "A" sub-group. In this manner there was more assurance of obtaining some toxicological data over exposure periods longer than 45 days as well as observing possible reversal of effects after termination of aerosol exposure after 45 days.

TABLE 1

Main Experimental Groups

Main Group	Experimental Material	Constitution	Character of Group	Total Number of Test Animals
I	Commercial Hair Spray No. 1	PVP-VA; alcohol; perfume; emulsifier; Freon propellant	T*	12
II	Commercial Hair Spray No. 2	Refined, bleached shellac; alcohol; perfume; emulsifier; Freon propellant	T*	12
III	Incomplete Hair Spray Formulation No. 1	PVP; alcohol; Freon propellant	TC**	12
IV	Incomplete Hair Spray Formulation No. 2	alcohol; Freon propellant	TC**	12

*Test Group
**Treated Control Group

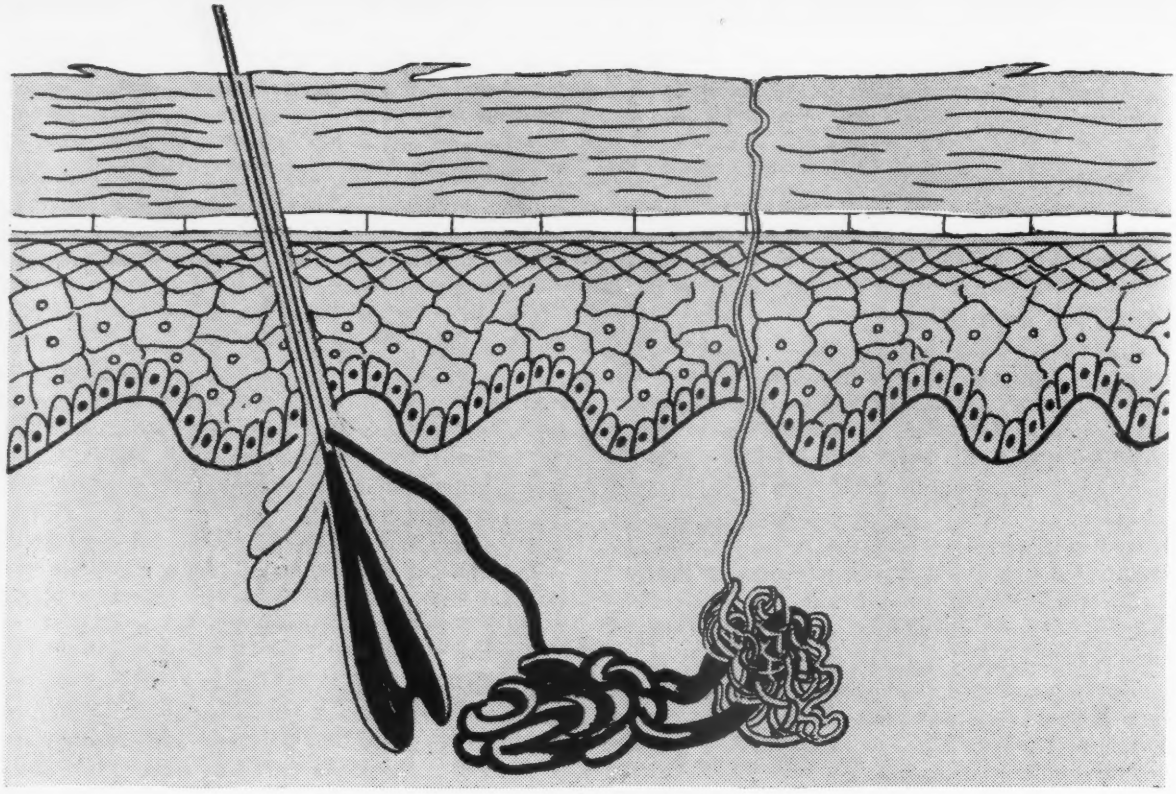
TABLE 2

Main Group Experimental Outline

Sub-group	Sub-division of Sub-group	Number of Animals	Aerosol Exposure Schedule: Total Time Exposed (Days)	Aerosol Exposure Schedule: Total Time Observed Following Exposure (Days)
A	None	4	45	0
B	B1	2	60	0
	B2	2	90	0
C	C1	2	45	15
	C2	2	45	45

The test protocol, then, provided for 12 guinea pigs to undergo aerosol exposure to each test material over a 45-day period. At this stage, a sub-group of four survivors ("B" sub-group) was scheduled for

(*Continued on page 252*)



HAIR GROWTH IN MAN

BY GAVERN T. WALKER PRINCES RISBOROUGH, BUCKS, ENGLAND

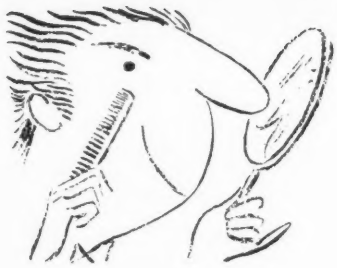
What are the functions of hair? We are told that scalp hair exercises some kind of protective function, but it would seem that such an effect is very slight indeed in man. Basler,[1] for example, has calculated that the hair layer on one square centimeter of human scalp is able to support only 22.5 grams of weight. The natural openings of the body are protected, to some extent, by the hairs to be found in and around these openings. We know, for instance, that the sweat from the forehead is diverted by the eyebrows away from the eyes. Again, the nasal hairs act as a filter of the inhaled air, removing much foreign matter from the latter. In and around the sexual organs, the hairs help to reduce the effects of rubbing by being situated in a kind of "buffer" position between the two adjacent surfaces.

In animals, hair exerts a considerably enhanced protective action. Sokolowsky[2] has discussed this matter in a very interesting paper. He mentions, for example, that spines and quills provide a most effective armor for some animals, while the manes of lions provide protection, to some extent, from claws. The well-known example of the tail hair in cattle being able to act as a fly swatter is also mentioned in this paper.

The scalp hair in man exercises some degree of protection against ultraviolet and heat rays. This is an important function of hair, since the action of these rays is definitely harmful to the organism if it is exposed for long periods to such radiation.

The fact that man, considered as a hairless mammal, possesses hair in some quantity around his sexual organ, determines the question as to the importance of hair in sexual life. The well-known fact that hair in the neighborhood of the sexual organs is able to receive and to transmit tactile stimuli during sexual activity shows its usefulness in this connection. Hair is, of course, a tactile organ. One has only to touch, however lightly, the eyelashes, and it will be found that a lid reflex is obtained. Animal whiskers are of considerable value to their owners since, like insect antennae, they transmit tactile data and help vision.

Schultz[3] has published most useful data concerning the density of hair in primates. He found that, whereas in Platyrrhine monkeys, the average density



of hair per sq. cm. on the scalp was 1,852, in Gibbons it was 2,035, in Anthropoid apes it was only 307, while in man it was 312. For chest hair, the figures were: Platyrrhine monkey, 610; Gibbon, 699; Authropoid ape, 90; and man, 1. It does seem, therefore, that loss of hair in man is part of a general evolutionary trend. Sokolowsky[4] believes that man's superior brain enabled him to discover fire, and thus to seek shelter in caves; under such circumstances, hair would not be so necessary as formerly.

Crew and Mirskaia[5] postulate that the original hairless man was a mutant. We know, of course, that the large majority of mutants are, from a biological viewpoint, inferior; nevertheless, in the case of the hairless man, the lack of hair, together with a more efficient thermoregulatory system, may have increased his powers of survival, especially in hot climates.

We shall now discuss the question of hair growth rates. Many people believe that if hair is cut or shaved, it grows at a more rapid pace. This is entirely erroneous. Bulliard[6] and Danforth[7], for example, agree that cutting exerts absolutely no effect on the rate of growth of hairs. Although many workers state that shaving does not accelerate hair growth, it must be mentioned that, immediately after shaving, the hair does grow at a quicker rate. However, such an immediate increase in the growth rate is followed, in a few hours, by a compensating decrease in rate of growth. Why is the growth rate increased temporarily, immediately following the process of shaving? We do not know for certain, but Fuchs[8] puts forward the suggestions that shaving exerts a strong mechanical stimulation which is responsible for the sudden increase in the growth rate.

Normally, hair grows at a rate of about 0.1 to 0.4 mm. per day,[9] but these figures depend in large measure upon various factors. We shall mention a few of the more important of these factors.

Eaton and Eaton,[10] in a fundamental study, have concluded that hair growth occurs at a greater rate during the summer months. These authors found that, while the measured daily growth of hair in the months of December and January was 0.375 and 0.305, respectively, the corresponding data for the months June and July were 0.516 and 0.533 mm.

Age seems to play an important role in hair growth. Myers and Hamilton[11] found that, between the ages of 21 and 30, the rate of growth of axillary hair was 0.36 mm. per day, while for the 45 to 52 group, it was 0.33 mm. per day. Between the ages of 64 and 66, however, the growth rate declined to 0.24. For the rate of growth of the beard, a slight decrease in growth rate was observed, from 0.42 for the 21 to 30 age group, to 0.37 for the 64 to 66 group. Trotter reported that the growth rate of pubic hairs did not depend upon age, while Myers and Hamilton[11] found that eyebrows retained their rate of growth as a constant throughout life.

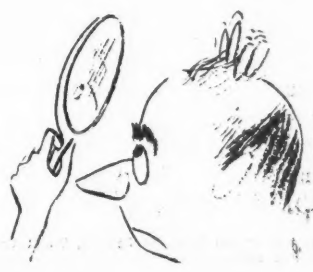
Sex plays a role in hair growth, as the following data will demonstrate. Myers and Hamilton[11] state that female scalp hair grows at a rate of 0.34 to 0.36 mm. per day, compared to a figure for men of 0.31 to 0.34 mm. per day.

We now come to a consideration of the various factors which operate to cause loss of hair. In many animals, a deficiency of one or more substances may lead to loss of hair. Many workers report that a deficiency in inositol will induce hair loss in the rat and mouse, while pantothenic acid is said to cause hair loss, if absent from the diet. Can we utilize these data on animal nutritional factors and hair loss in order to apply the results to human beings? To this question, Flesch has replied thus: "We are even less justified in transferring directly the results of experiments conducted in deficient animals to clinical cases of human baldness. Unless experimentally induced, virtually all human nutritional deficiences are multiple deficiences. However, it appears that, while hair loss in animals is an early and frequent sign of the deficiency syndrome, severe nutritional deprivations are necessary in man before hair growth is impaired. The reason for this discrepancy may well lie in the fact that in man a much smaller percentage of the entire protein metabolism is diverted into the formation of hair than in animals."[12]

In spite of this timely warning by Flesch and earlier authorities, many chemicals have been tried for the prevention of hair loss. Among such materials, we may single out cholesterol, pantothenic acid and hydrolysates.

Cholesterol has for a long time found its way into many types of hair preparation, notably those intended for the treatment of alopecias. The basis for the use of this compound lies in experiments on rab-

(*Continued on page 254*)



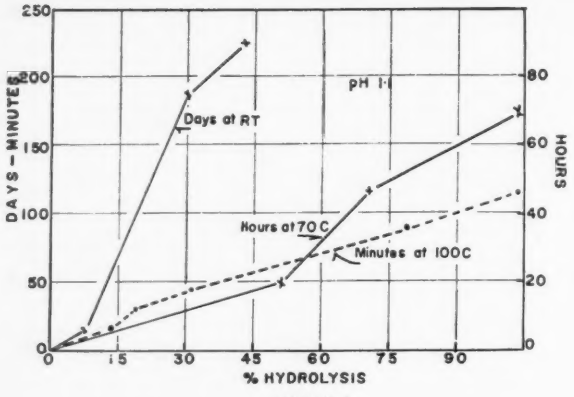


FIGURE 1

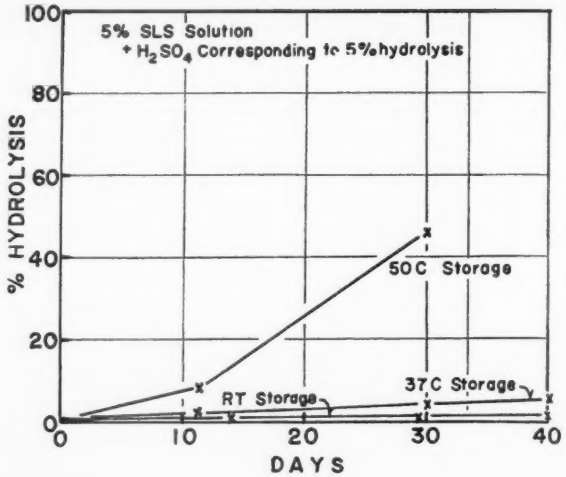


FIGURE 2

HYDROLYSIS OF ALKYL SULFATES*

BY R. R. READ AND W. G. FREDELL WARNER-LAMBERT RESEARCH INSTITUTE

The stability of sodium lauryl sulfate (SLS) in solution has been a question raised alike by producers and users. The general statement in circulation is that it will hydrolyze, but nothing is stated about the conditions of storage, such as temperature and actual *p*H of the solution. Analytically SLS is determined by refluxing after the addition of a great excess of acid. Cosmetic and other applications do not usually make use of these conditions. The conditions favoring hydrolysis of this ester are in part the opposite of that producing rupture of fats. Even down to a *p*H of 3, damage does not take place at room temperatures. Higher temperatures and higher acidity can result in breakdown up to 100 per cent in a few hours, or a shelf life shortened to only a few months.

Commercially, sodium lauryl sulfate is available as (1) a liquid containing approximately 29 per cent of active material together with a small amount of $NaHCO_3$. The U.S.P. powder or crystals (2) contains approximately 90 per cent of active material together with Na_2SO_4, NaCl and unsulfated alcohol. A purer variety of powdered product (3) contains not less than 99 per cent of active material. For these preliminary studies solutions of 1 and 3 were prepared and adjusted to various *p*H's and subjected to various temperatures to note effects of such on hydrolysis.

Buffering was not a part of this study.

If hydrolysis takes place, the following reaction indicates what happens: SLS+HOH—►lauryl alcohol+$NaHSO_4$. This being the case, the change in titratable acidity can be used as a measure of the amount of hydrolysis. The *p*H of the solutions was varied between 10 and 1.1, and temperature from room to boiling. Hydrolysis produced covered a range of 0-100 per cent. The *p*H levels were not constant, of course, since such hydrolysis as took place produced "lauryl" alcohol and acid sulfate, thereby lowering the *p*H.

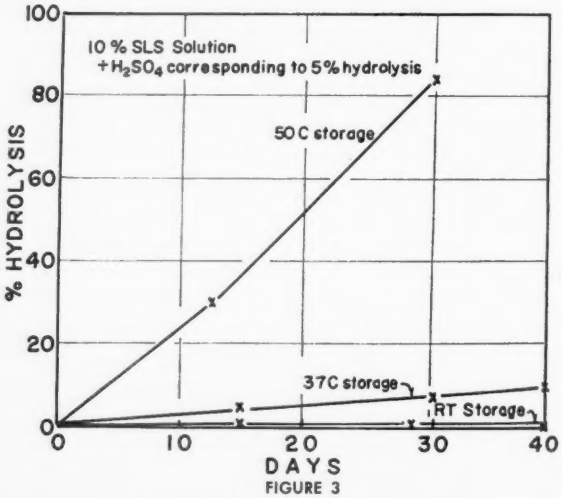


FIGURE 3

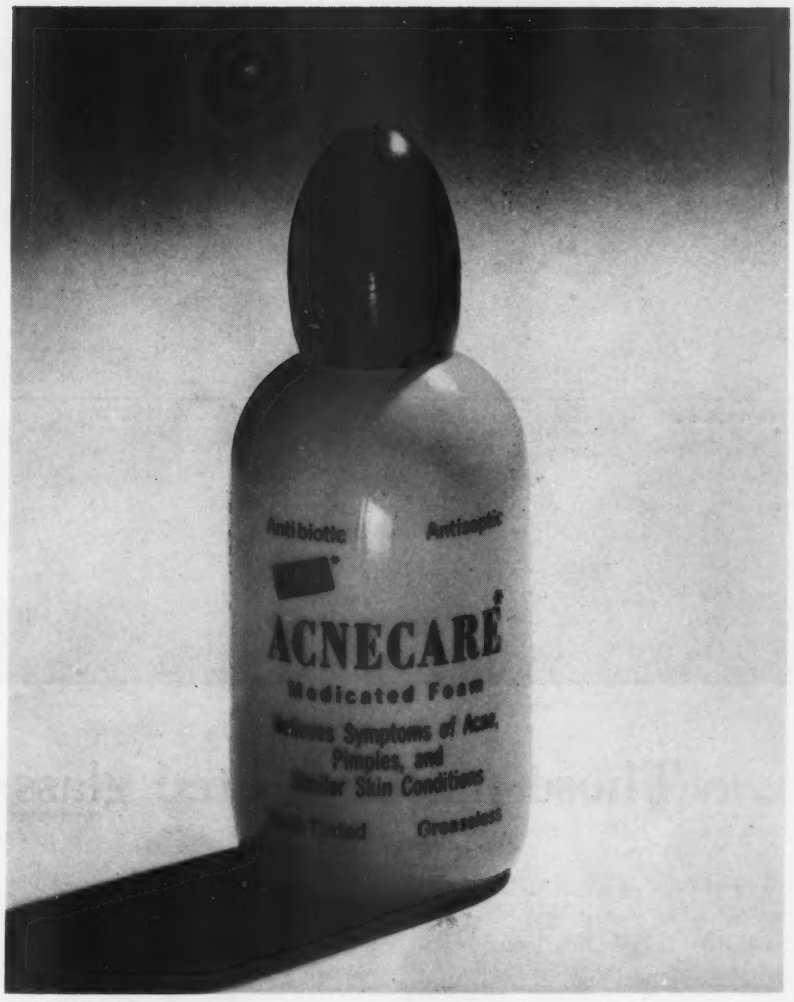
Experimental Data

As stated above, storage conditions are an important consideration. As shown in Figure 1, time varies from minutes to months for hydrolysis to take place. The data for the graph, supplied by Dr. A.

(*Continued on page 256*)

*From the Proceedings of the Scientific Section, Toilet Goods Association, Number 30, December 1958.

Packaging and Selling



Eez Acnecare, new medicated foam for the masking and relief of acne symptoms, from the Family Products Department, Chas. Pfizer & Company. The 2-ounce, pink plastic-coated aerosol glass bottle is by Wheaton Glass Company, the inverted foam-dispensing valve by Risdon Manufacturing Company.

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1958 PHARMACEUTICAL PRODUCTS PARADE

BY PAUL de HAEN

Stock market prices do not necessarily go hand in hand with the marketing of the number of new products. Values on the stock exchange for pharmaceutical firms went higher than ever before, but the number of new products marketed in 1958 by the pharmaceutical industry was for the first time in six years significantly reduced from the previous year. The total number of products marketed nationally amounted to 370 preparations as compared to 400 in 1957. An additional 109 new dosage forms were also made available in 1958. Of the total of 370 products, 253 represented compounded products and 44 were new chemicals or new derivatives of previously marketed new chemicals. A reduction in the number of new products introduced might partly be due to the present very high introductory cost of promotion, which may have made some firms hesitate to put out as many products as they otherwise had planned.

What motivates an individual firm to market new products, aside from significant advances in therapy, is not always easy to understand. One of the ten largest firms marketed two new minor products in 1958. Another firm of the same group placed in the hands of the druggists 18 new products and seven new dosage forms, a total of 25 new items. Of these only two were original contributions and only one of them belongs in the several million dollar class. Ayerst, Ciba, Lilly and Merck Sharp & Dohme each brought out three new chemicals; Abbott, Lederle, Pfizer, Smith Kline & French, Squibb, Upjohn and Wyeth each had two preparations of this type. It is also worthy of note that 16 of the 44 new chemicals were either developed in foreign countries or marketed by firms which are owned abroad. Six of the 44 new chemicals were derivatives of previously marketed products. They were made available because of better solubility, increased potency, or because they offered other advantages.

The industry must have had a special pipeline to the weather bureau—advance forecast department—and have known of the severe winter we are having this year. Thirteen new cough mixtures have been marketed along with 20 products for colds. Tessalon Perles and Bradasol Lozenges of Ciba are two newcomers in this field. Some of these represent combinations of relatively small doses of antibiotics with APC formulae antihistamines. That dermatological problems have not been solved is attested by the fact that 34 new preparations have been suggested for use by the medical practitioner. Temaril, the long-acting antipruritic of Smith Kline & French, is the outstanding innovation in this field. The same need for improved dermatological products seems to exist in Germany, where the medical director of a large pharmaceutical firm wrote in a popular magazine about acne as the "terror of the teenagers." Evidently the latter term has been absorbed into the German language.

The antibiotic field has had both replacement of old products by combinations of the tetracyclines with glucosamine, phosphates, or citric acid to obtain better blood levels, and five innovations. Triacetyloleandomycin is a newcomer and is available as Cyclamycin (Wyeth) and in combination with tetracycline as Signemycin (Pfizer). Ilosone (Lilly), marketed in November, represents the propionate ester of erythromycin and may offer special advantages. New antibiotics have been developed to combat the widely prevailing resistant staphylococcic infections. In addition to novobiocin, previously marketed by Merck Sharp & Dohme (Cathomycin) and Upjohn (Albamycin) in 1956, Bristol Laboratories made available the Japanese antibiotic kanamycin under the name of Kantrex, and Lilly recently completed its development of Vancocin. Both these preparations are effective systemically only upon parenteral administration. The industry still feels that there is a need for a combination of antibiotics with sulfonamides, and five new products were offered. Whether this is worth the effort remains to be seen. Speaking of sulfonamides, Roche Laboratories succeeded in producing a long-acting preparation marketed in October under the name of Madribon. Squibb has always had a special interest in fungicides, and Fungizone (amphotericin B) is now available in parenteral form for the more severe types of infections.

It is clear that every pharmaceutical firm would

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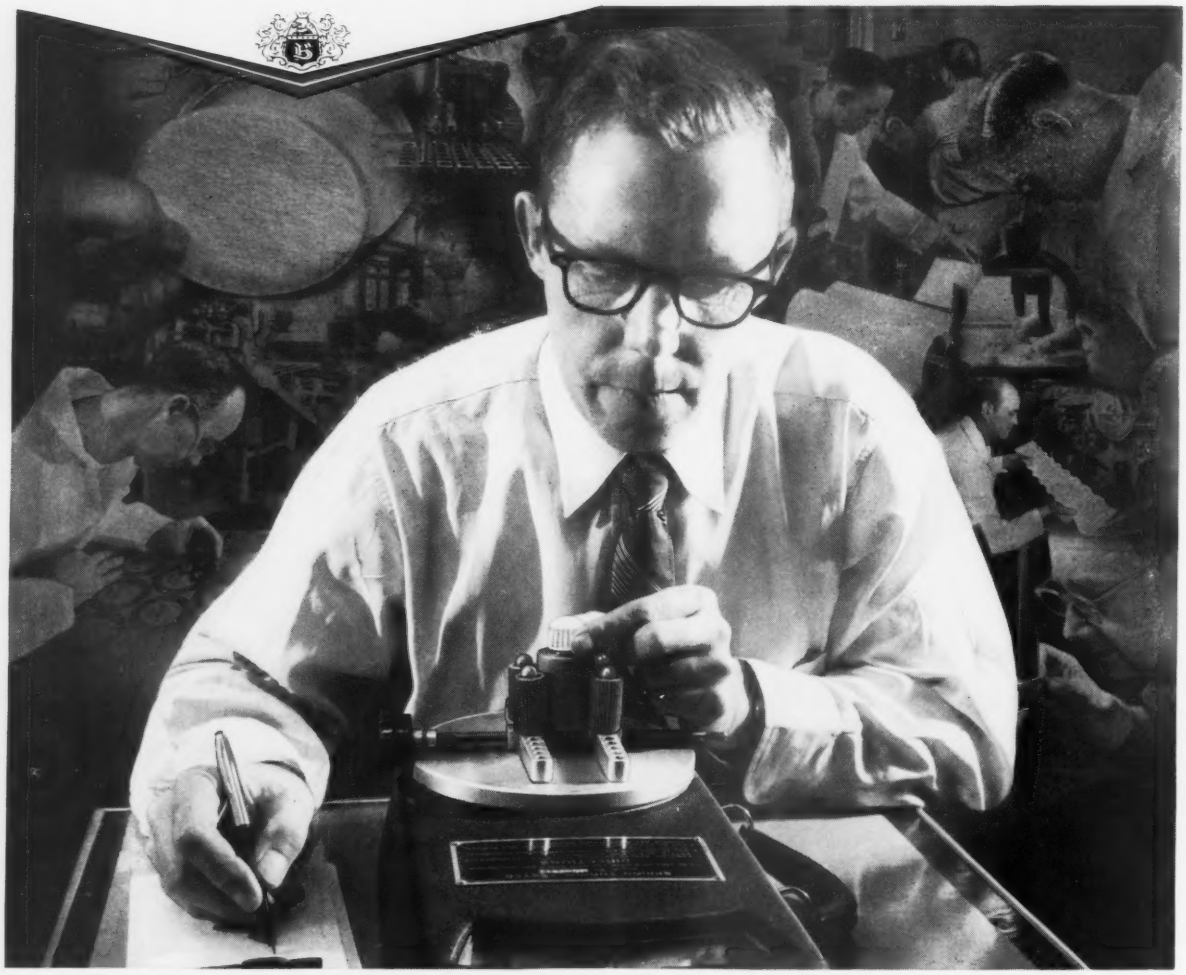

"PROOF OF THE PUDDING"

This is the laboratory, where science and statistics prove —or disprove—whether a new coating *is* superior; whether that change on the pressline was good; whether that experimental die-hardening process justified the extra time. This is where incoming components run a critical gamut before acceptance. This is where chemistry, physics, metallurgy, and every appropriate testing device is at hand for technicians who have but one responsibility. Prove—or disprove.

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like to produce a successful new tranquilizer or ataraxic. We shall leave to the psychiatrists the question of cause of this demand, in this era of unprecedented well-being and prosperity; the future will determine the success of the new contributions. Merrell has produced Quiactin, Ayerst marketed Suvren, and Pfizer has brought out Vistaril, the pamoate salt of Atarax. In addition we have Deprol (Wallace) for depression, in which benactyzine, developed in England, is combined with Miltown; Deprol is being very heavily promoted. Toward the end of the year Winthrop came forward with Trancopal, the first tranquilizer to combine both relaxant and tranquilizing action since meprobamate. This drug looks very promising. Smith Kline & French developed Stelazine. This drug is at present primarily intended for use on institutionalized patients suffering from schizophrenia and the more severe type of mental disorders; it is not easy to use, but is effective in many cases. There are 13 new dosage forms of tranquilizers. These drugs are also being combined with an increasing number of other therapeutic agents where they take the place of phenobarbital.

There are refinements in the hypotensive field where Pitman-Moore have developed Protalba, protoveratrine A. Late in 1958, Ciba completed its studies on Singoserp, the hypotensive component of reserpine, a rather neat chemical development, splitting the molecule and then rebuilding it.

With quite a few firms it seems to be fashionable to have a vasodilator but not much that is exciting has come forward in this area. There is room for improvement, but toxicity is sometimes a barrier. Leeming's development of heparin for oral administration, not as an anticoagulant but as a lipolytic, will no doubt be evaluated by many cardiologists. It is sold under the name of Clarin.

I am not quite sure how to classify Riker's product Deaner, which is proving helpful to children in behavior and learning problems. Buccal preparations of trypsin, Parenzyme B (National Drug), and of streptokinase-streptodornase, Varidase (Lederle), have had a good reception, indicating that enzyme products are on the upgrade.

Experiments with the development of new antihistamines are being continued. Schering came forth with Polaramine Maleate, the dextro isomer of Chlor-Trimeton Maleate, and Burroughs-Wellcome with Actidil, both effective in low dosage. Because diarrhea has various causes, new products with different forms of action have been offered. Furoxone of Eaton is an anti-infective belonging to the nitrofurans, and Arobon (Pitman-Moore), so successfully used in Europe, acts by adsorption. Manufacturers will always try new combinations of laxatives, and several such products have been offered. Now and then there is a really new product such as Dulcolax, a contact laxative of Geigy; and Polykol of Upjohn. With all the food supplies available today it is always difficult to realize the tremendous market of hematinics; possibly this is the result of improper dieting in the young and poor eating habits of the aged. Astra of Sweden prepared a new intraveous form of iron (Astrafer).

The competition in the corticoid hormone field has been severe and will continue to be so. One might call it the battle of the milligrams. In 1958, Aristocort of Lederle and Kenacort of Squibb started it, and late in the season came Decadron of Merck Sharp & Dohme, to be followed by Deronil of Schering.

The December Conference on the Ten Year Use of Corticosteroids sponsored by the New York Academy of Sciences made it clear that patients may respond differently to the various derivatives. In some, prednisolone, in others, triamcinolone, and in still others, dexamethasone may be the preferred drug. Side-effects can be handled by a proper adjustment of dosage. It is too early to say at this time whether the physician will give general preference to one product of this type, or whether he will take the time to select the right corticosteroid for each patient.

Pfizer has done a great deal of research on Diabinese, an oral hypoglycemic agent. It will be interesting to watch whether this drug, with its higher potency and toxicity, will prove to be as useful and find as wide an acceptance in the oral treatment of diabetes as Orinase of Upjohn. Four new "tonics" have made their appearance, together with thirty-nine vitamin combinations. Among the latter are five combinations with hormones. These should help that "tired feeling!"

McNeil has continued its studies with muscle relaxants and has presented Paraflex, while Armour is offering Sinaxar.

Phenylketonuria, a deficiency disease in infants, occurs in about one in 20,000 births. It is a serious illness because it causes irreversible changes in the brain. There are between 6,000 and 9,000 phenylketonuria mental defectives in the United States today. Ames developed a simple test for the early detection of phenylketonuria (Phenistix) and Mead Johnson is offering a dietary supplement (Lofenalac) with which this deficiency can be overcome and the child saved. A similar product was previously made

(*Continued on page 257*)

OPAL . . . the aristocrat of glass

For beauty, utility and all-around satisfaction, opal jars are the most desirable containers for cosmetic creams.

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Packaging and Selling

It has always seemed to us one of the mysteries of the cosmetic business that, while men's toiletries have been expanding so vigorously in sales in the last several years, at the same time such a high percentage of men anyone meets from day to day declares they do not use such things as a pre-shave or an after-shave or a cologne. It can be disputed, of course, that this is not factual evidence and that surveys show a high percentage of men to be using these things. Certainly it is true that the sales of these products have been showing a substantial growth each year.

Now the Owens-Illinois Glass Co. comes along with a survey just completed for them by the Home Makers Guild of America. It shows that after-shave lotions enjoy widespread acceptance. Nine out of ten men contacted in this study said they used such preparations. The same number had at least one brand of after-shave lotion on hand at the time of the study. More than half of these users indicated they had received their current product as a gift. The men who used their own products purchased an average of 3.1 bottles a year. There is a large uncaptured market of 35 per cent who did not purchase any such product during the year.

Nearly three times as many men have used after-shave lotions as have used pre-shave preparations. At the same time, there were three times as many brands of after-shave lotions in the home as there were pre-shave lotions.

Among the pre-shave lotions, the only overwhelming preference is for a liquid preparation, and a great majority of the users, that is, 69.6 per cent, personally bought their own current brand of the lotion. Those who did purchase, bought an average of 2.4 bottles a year.

The electric razor is not so widely used as is generally believed. The fact that only one-third of the men interviewed use an electric razor exclusively, might perhaps indicate that the electric razor has lost a great deal of its sales momentum.

The most surprising finding in this study is that one-third of the safety-blade razor users were still using soap from a cup or mug. Another 38 per cent use a shaving lather from an aerosol container, 20.4 per cent use cream from a tube and 15.1 per cent prefer the brushless cream from a tube.

While the pre-shave products have their primary market with electric shaver users, there is some indication that blade razor users find advantages in this product. Slightly more than one-tenth of the men who use blade razors have had some experience with a pre-shave lotion. But among the men who use the electric shaver exclusively, the percentage increases to 59.8 per cent.

National Sales Executives, Inc. asked members, a little while ago, to check off the 15 problems out of a total list of 58 that give them the biggest headaches. Here are the 15 primary sales problems of the sales managers as released by this association.

(1) Effective motivation (incentives for salesmen),
(2) Increasing effective selling time (more calls per salesman),
(3) Development of creative selling techniques,
(4) Training—and performance evaluation,
(5) Effective sales supervision practices,
(6) Recruitment, interviewing and selection,
(7) Planning successful sales meetings,
(8) Betterment of salesmen's attitudes,
(9) Proper use of sales promotion aids,
(10) Effective sales forecasting techniques,
(11) Development of sales supervisors,
(12) Profitable sales analysis—by salesmen,
(13) Measuring the impact of competitive practices,
(14) Setting equitable sales quotas, and
(15) Buyer motivation data.

Abbott Laboratories is one of many leading cooperatives that is laying specific plans to create an extensive corporate image. This program is in the charge of Charles S. Downs, vice-president in charge of public relations and advertising; and George Nelson and Company, industrial design organization, has been appointed to plan and integrate the entire program.

Specifically, there will be a graphic redesign of Abbott's packaging, trademark and letterheads, in addition to other aspects of corporate communication involving buildings, plants and offices concerned with the Abbott operations.

Every once in a while an advertisement breaks every precedent and produces with a bang that startles all the experts.

Of course, in the long run it is not breaking precedent to run an advertisement that is nothing but copy and words but, in the advertising of today, to drop all illustrations and to load a page with copy comes very near doing so.

At any rate, the Dodge automobile people recent-

ly ran such an advertisement—a full page crammed with copy and no illustrations. This ad ran in 1,200 newspapers in a little over 1,000 markets. According to reports, the company was startled with the way they were swamped with letters and orders and long-distance calls from local dealers all over the country.

Advertising has become so obsessed with the idea that one picture is worth 10,000 words that they have stopped thinking about the subject. The actual fact is that, when anyone has anything specific to say which is newsworthy and informative and contains the kind of information people want, then advertising can produce startling results with an advertisement that is good, solid "reason why" copy.

Some changes appear to be taking place in the higher priced toilet soap business. This comprises the soap normally sold by perfume and cosmetic companies and made by private-label soap makers in all but one or two instances. Such soaps are usually given a wide variety of beautiful packaging treatments, and normally sell for from three cakes for $1.00, to one cake for $1.00, or even higher. Although the total volume probably has never exceeded $5,000,000 for the manufacturers concerned, it has, nevertheless, been an important part of the retail cosmetic business in the finer stores.

A recent discussion in the trade centered on why one of the leading cosmetic companies is taking so drastic a loss in its soap business and, consequently, turning actively to other cosmetic products; and conversely, why another parallel cosmetic company seems to be increasing its soap business.

The conclusion was that the losing company, whose soap business, incidentally, has centered around box presentations of three cakes for $1.00, has been expanding its distribution during the last several years into a considerable number of drug stores.

The number of drug stores distributing this soap is far above that very limited number of drug stores —approximately 4,000—where trained cosmetic salesgirls are employed.

This wider circle of drug stores has been losing its soap business to the supermarkets. Consequently, they are either playing down their gift soap business or closing it out. This has drastically affected the sales of the first cosmetic company, which had widely extended its business to drug stores, but had not been able to enter the supermarket field.

On the other hand, the cosmetic company that showed some gains in toilet soap sales and had sensed this trend, has been deliberately eliminating many drug stores from its distribution and has established an active policy of restricted distribution, primarily in cooperation with department stores.

Another factor seriously affecting the first company is that drug chains are losing soap sales and are beginning to eliminate toilet soap from the cosmetic department. We understand that two leading drug chains have recently closed out all soap brands and that another has publicly stated there was not enough turnover to warrant their devoting any space to toilet soap.

Here are the conclusions of another study of the value of color, this time conducted by the Houston Chronicle:

(1) One color added to black and white increases readership 45 per cent, on the average. It increases retention 50 per cent.

(2) Full color increases readership 86 per cent, on the average, and retention to 92 per cent.

(3) Color pulls more readers regardless of ad size.

(4) Color pulls more readers into the copy block.

(5) Color strengthens brand identity.

What makes a buyer act that way? A leading chemical company has just come up with some answers as a result of an extensive study in depth of buyers' reactions, as follows:

The corporate image of a supplier is almost totally that of his individual salesman.

Purchasing agents often show fear of smaller suppliers, doubting their ability to hold price lines under inflationary conditions, to meet delivery schedules, to perform adequate research and devlopment and to provide sound technical service. Buyers logically look for strength in sources of supply.

As a memo to this conclusion, we would suggest to the smaller companies some valuable subjects to cover in their advertising.

Almost invariably, purchasing agents tell motivation researchers that buying decisions are coldly logical. The buyer always carefully weighs price, service, delivery, quality, labor relations, research and development. And he likes to think that purchasing decisions are not influenced in any appreciable degree by human relations. For most buyers, however, this rapid recital of purchasing ABC's betrays an inner, and hidden element of insecurity.

Although fundamentally secure in their position, the typical buyer works under great tension. The prospect of making a decision is continually before him. The typical buyer knows perfectly well that he is going to make mistakes, that he may fail to satisfy production schedules or to buy at the best price. The chemical company survey shows that only a limited numbers of buyers can look with tranquillity at the percentage of misjudgments that are bound to be their human lot.

Buyers do not like vagueness in selling. They want specific assurance on delivery dates, shipping adequacy and so forth.

The buyer continually feels that he is in the middle. On the one side is his own company demanding a favorable price, fast delivery, quality and uniformity of product; on the other side is the supplier, often

Aerosol Product Ideas for You!

Are you interested in aerosol pharmaceuticals, cosmetics and toiletries? Cosmetics are the leading sales producers right now and pharmaceuticals will probably make the next big break-through in aerosol marketing. Or are you interested in aerosol household products, whose sales continue to boom?

If so, you'll want the helpful *Product Information Bulletins* prepared by our "Genetron" Aerosol Technical Service Laboratory on many new as well as established products.

They're free. They contain such basic information as: typical aerosol formulations . . . application methods . . . advantages offered by the proposed aerosol product . . . packaging suggestions . . . data on stability, flammability, pressures, etc. . . . competitive products.

The bulletins presently available are listed for your convenience in the coupon at right. Others are continually being prepared, and we will be glad to send them to you if you would like to be put on our mailing list.

One of these product suggestions may be just what you've been looking for to help you tap the dynamic aerosol market! So check the coupon for the bulletins you want and mail it *now!*

genetron®
AEROSOL PROPELLANTS
Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

"Genetron" Department
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL CORPORATION
40 Rector Street, New York 6, N. Y.

Please send copy of Product Information Bulletins checked.

- ☐ Athlete's Foot Medication
- ☐ Burn Remedy
- ☐ External Analgesics
- ☐ External Personal Deodorants
- ☐ Hair Dressing for Men
- ☐ Hair Shampoo
- ☐ Hand Lotions, Creams
- ☐ Ice Tray Desticker
- ☐ Nasal Relief Spray
- ☐ Neomycin Foam
- ☐ Neomycin Spray
- ☐ New Hair Spray
- ☐ Poison Ivy, Oak and Sumac Remedy
- ☐ Run Stopper
- ☐ Sarcoptic Mange Spray
- ☐ Spray-on Protective Film
- ☐ Suntan Lotions
- ☐ Wall Cleaner
- ☐ White Shoe Polish
- ☐ Household Aerosol Products (includes such popular products as room deodorants, oven cleaner, glass cleaner, disinfectant, mildew proofer, wax polish, water repellent, etc.)

☐ Please add my name to your Product Bulletin mailing list.

Name_____

Title_____

Company_____

Address_____

DC-29

City_____ Zone____ State_____

a strong supplier, looking for the highest possible price, delivery at the supplier's convenience and very often quality and packaging at the lowest level of acceptability.

The salesman who gets the business is most often the salesman who can help the buyer reconcile these two viewpoints to his own satisfaction and that of his company. The best selling leaves no doubt in the buyer's mind; it gives him full assurance that he has made the right decision.

According to Variety Store Merchandiser, a trade publication, the drug and cosmetic department in this branch of the retail trade has shown an increase in sales for the first times in many years.

During the last 10 years, a period of fairly consistent trading up, the variety store has fallen behind in the tough competitive retail struggle for cosmetic sales. Also during this period, the cosmetic industry has opened over 50,000 new retail outlets in the grocery field, offering a new convenient source for staple cosmetics which has cut deeply into the variety field.

This trend may have changed now, and perhaps the variety store will again regain its normal position, which should average between 8 and 15 per cent of cosmetic retail sales.

Speaking of images, as everybody seems to be doing nowadays both in the retail trade and among manufacturers, Charles Beall, trade promotion manager of McKesson & Robbins, in a talk before the National Wholesale Druggists' Association comes up with the idea that from the viewpoint of the public, the drugstore is not just one mental image, but actually five. These images are:

(1) The image of the drugstore as it compares in the public's mind to the other retail establishments on Main Street;
(2) The image of pharmacy as a profession and a career;
(3) The image of the physical layout of the drugstore;
(4) The image of the merchandise the druggist carries and of the method by which he promotes it;
(5) A very definite image of the performance of drugstore sales people.

Of course, as Mr. Beall admits, these images merge in the average customer's opinion of a drugstore, but still each one is important, or it should be, to the retail druggist.

This strikes us as not only a very intelligent analysis of the personality of a drugstore, but also some very useful thoughts as to ways in which an intelligent salesman can approach his drugstore customers.

National advertisers spend millions annually on display materials. However, according to a recent chain store panel conducted by *McCall's*, "Windows are becoming less important all the time, thus the big, dominant centerpiece designed to stop traffic is outmoded.

"On the other hand, the emphasis should shift to pieces geared for use in gondolas, on flat-top tables, in wall runs.

"Always good are the combination shipper-display cartons, but more thought should be given to adapting these for use in smaller stores (which means fewer units to the carton)."

Local TV has been a long way behind cooperative newspaper advertising for local retail promotion. In 1958 automobile dealers were way out in front with 123 dealers in 11 markets using local TV. Compared to this, only 20 drugstores used this medium.

The Barbasol Company of Indianapolis has come up with a solution for moving, without causing either permanent or temporary unemployment.

The firm began moving on December 15th, and its new quarters were ready for production on February 1st.

The men employees were helping with the move, but a number of the women assembly-line workers faced six weeks of unemployment over the holiday season.

The very happy idea the company developed was to employ these women in public relations and make them "ambassadors of good will."

During the six weeks the girls went about town calling on drug stores, barber shops and supermarkets, talking up Barbasol shave cream.

We have an idea that this move will pay the dividends it deserves.

Lehn & Fink Products Corporation is starting a drive on sickroom needs with the slogan, "Your pharmacist guards your community when sickness strikes." This drive is scheduled so that the pharmacist can tie it in with the critical winter health months when demand for sickroom supplies is at its peak.

According to the company, sickroom items represents an $800 million market.

Ever since Schick came under the corporate management of Revlon, many people in marketing circles have been waiting to see what would happen to this pioneer electric razor company.

Effective February 21st, Schick is bringing to an end its distribution policy of working through 1,200 distributors who have worked with this company from the beginning. A new direct factory-to-retailer distribution plan is being installed.

At the same time, Schick is discontinuing all trade-in allowances.

This is in line with the general movement of this branch of the trade and is a move toward more real-

Clairol Incorporated
– world leader in hair cosmetics,
selects Sheffield Process Tubes
for its new Vitapointe Creme
Hairdress and Conditioner. Why?
Because only collapsible metal
tubes offer air-tight product
protection . . . absolute safety
. . . greatest convenience in home use.
Too, metal tubes have "built-in" customer
acceptance because there's no product waste!
Discuss your product packaging
problems with the man from Sheffield.
Vitapointe
CREME HAIRDRESS AND CONDITIONER

THE SHEFFIELD TUBE CORPORATION... ESTABLISHED 1901. HOME OFFICE: NEW LONDON, CONN. SALES OFFICES: NEW YORK, CHICAGO, LOS ANGELES

SHEFFIELD TUBES

NEW FORMULATION SERVICE . . . most up-to-date of its kind in America, to help fillers and marketers develop new aerosols, modernize older ones, profitably!

ALL REPRESENTATIVES TECHNICALLY TRAINED . . . you'll enjoy dealing with men who know aerosol markets, understand production problems.

ON-TIME DELIVERY of the quantity you need, from a nationwide network of distribution points.

YEARS OF EXPERIENCE back the high quality of UCON Propellants . . . and the technical assistance now available to you.

CARBIDE has long been active in emulsion technology, surface-coating technology, silicones, solvents, and the manufacture and handling of gases . . . all associated with the aerosol industry. Thus, UCON Propellants are a logical extension of CARBIDE's research and development programs.

For more information, write: UCON Propellants, Union Carbide Chemicals Company, 30 East 42nd St., New York 17, N. Y. Call, write or wire us, today! Attention, Dept. B-2.

UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation.

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation

UNION CARBIDE
Ucon
BRAND
propellants

UCON Propellants are available in five grades

UCON Propellant 11 Trichloromonofluoromethane
UCON Propellant 12 Dichlorodifluoromethane
UCON Propellant 22 Monochlorodifluoromethane
UCON Propellant 113 Trichlorotrifluoroethane
UCON Propellant 114 Dichlorotetrafluoroethane

istic merchandising. Very few electric razor users were unaware of the fact that the discount houses were selling the leading brands of electric razors cheaper than the franchised dealers were selling them with the inclusion of the trade-in.

Where do new ideas for new products and new promotions come from? Recently, a large business consulting firm decided that this was a question worth answering. Consequently, it made a detailed study of 83 leading companies covering the new products produced by these companies over a period of years.

Surprisingly enough, the ideas for new products or product changes and developments came first and foremost from the marketing department. In this extensive survey, 33 per cent of all new ideas for product development that were found worth carrying through to completion came from the marketing department.

Research and development departments were second, with 29 per cent. Top management and customers tied for third, with 12 per cent.

In a recent chemical company's survey of salesmen and buyers, the buyers classified salesmen in four general groups:

(1) The forceful, aggressive type. This type is generally resented, very often as a threat to the buyer's own security.

(2) The oversolicitous. This is the yes man, disliked with equal intensity. Buyers are very prone to suspect that he does not always tell the truth.

(3) The robot salesman. This is a man who makes a coldly logical presentation. This salesman often takes the attitude that his company and its products, as well as its services, are so good that they speak for themselves. Buyers seem neither to like or dislike this type of selling.

(4) The man-to-man type. This is a salesman who will disagree with a buyer when it is necessary to establish his point and who talks to the buyer as man to man. He is a technical specialist as well as being well balanced both socially and emotionally. He tends to take the buyer's problems as his own. This is the salesman who usually gets the order.

Price, delivery and quality is still of primary importance. However, the salesman who can properly and skillfully handle the emotional factors is generally the man who comes out ahead.

Following the New York newspaper strike there has been a certain amount of agitated discussion as to whether newspaper advertising during the next Christmas season will be influenced by certain conclusions drawn from this strike. For instance, during this long period preceding Christmas when no newspapers were printed, retail sales for the Christmas season reached an all-time peak, with a substantial increase over last year.

Recently a top store executive in New York was quoted as follows: "There will always be that kind of conjecture. (That is, how well newspaper advertising pays during a holiday season). Sure, we probably spend too much money on advertising each Christmas. John Wanamaker once said, 'I know half the money I spend on advertising is wasted, but I can never find out which half.' "

Parke Davis & Co. this year plans to use the oil painting, Great Moments in Medicine, which has previously been used for window and counter displays, in a consumer magazine advertising campaign to include *Life*, *Reader's Digest*, *Saturday Evening Post*, *Time* and *Today's Health*. The painting will appear in four colors.

If several recent surveys are taken at face value, the grocery supermarket has passed the line where it is definitely outselling the drugstore in staple toiletries.

One of the most recent surveys, made by the Southwestern Publishing Company, shows that in the area around Fort Smith and neighboring cities 45 per cent of the toilet articles and cosmetics purchased were bought in supermarkets. Drugstores accounted for 34 per cent of the purchase of these staples.

According to a survey published by Aerosol Techniques, Inc. of Bridgeport, here is what will probably happen in the use of aerosols in the next few years.

Pharmaceuticals and food should make the greatest gains within the next three years.

A $200 million pharmaceutical aerosol market is foreseen by 1961.

More glass, aluminum, plastic and perhaps paper will be used as container materials.

Line speeds, at present up to 150 units per minute, should achieve speeds in excess of 300 per minute.

Propellants and valves will continue to improve.

There are a dozen times as many special-product months, weeks and days as there is time available, and yet every once in a while we read in the paper that some new industry has set aside a week to celebrate its product and promote its goods.

As a bit of information to pass on to anybody who is thinking of anything like this, we have just seen the report on Canned Foods Month, which took place in September, a month in which everybody in the industry and all the retailers were supposed to pop up with a lot of advertising and promotions for canned foods. A lot of them did, but for some reason or other it never occurred to the consumer that anything unusual was happening. In fact, during this month the sale of canned goods dropped by nine per cent. To make it worse, this past September's sales are contrasted with those by September a year ago, in which there was no industry promotion at all.

the lady never heard of G. Barr & Company

. . . but we're contributing to her daintiness and charm

The famous brand of spray cologne, hair spray, tooth paste, antiseptic, car polish, room deodorant, and scores of other aerosol products found in homes all over America were in many instances developed in our research laboratories and private label manufactured by us.

While our name *never* appears on a package, G. Barr & Company's aerosol packaging know-how is the *"hidden ingredient"* that is helping to sell tens of millions of America's leading aerosol products today. Have you heard the G. Barr & Company story? Ask for facts today!

G. BARR & COMPANY

Private Label Aerosols

3601 S. RACINE AVE. CHICAGO 9, ILL.

News in Packaging . . .

Market Research Grows

American companies are increasing their use of formally organized marketing departments, according to an American Management Association study. Forty per cent of the 195 companies covered had sales volumes of more than $100 million; 27 per cent had sales of $25 million or less.

More than three-fifths of these 195 companies have at least one full-time marketing research employee; slightly more than one-fourth use part-time market research help; most of the rest use an agency.

The use of marketing research on a full-time basis has increased more than 500 per cent since World War II among the companies studied.

Armstrong's Amber Vials

A complete line of amber plastic vials that exceed USP requirements for light protection has been developed by the Glass and Closure Division of the Armstrong Cork Company. Capped with white polyethylene snap caps which seal tightly and have flat tops for convenient marking, the amber vials have the same design as the recently redesigned clear plastic vials.

They are available in 3, 5, 7, 10, 12 and 14 dram sizes and can be obtained in dispensing cartons or in Kraft trays of a new material that reduces static deposits of carton dust in transit.

New cotton-tipped applicator bag with autoclave indicator line which turns from pink to brown after sterilization, from Glasco Products Company, Owens-Illinois subsidiary, made to save time, doubt about stored applicators.

Packaging from the Woman's Point of View

JoAnn Shurpit, director of the department of home economics, Libby McNeil & Libby, presented some interesting feminine pet peeves regarding packages at the Annual National Packaging Forum in Chicago. Although Miss Shurpit was speaking primarily about food packages, several of the ladies' complaints apply equally to the drug and cosmetic industry: packages too large for a small family; packages larger than the contents require; packages with too small an opening for the insertion of a spoon; packages that cannot be closed thoroughly for proper storage; inadequate or poorly stated directions and directions that are removed when the outside container is removed.

Miss Shurpit also presented some considerations for package designers to keep in mind: a package style, design, material and colors appropriate both to the product and to its use; an aesthetically pleasing shape; a package that reflects the quality of the product; an easily recognized symbol, picture or trademark; an easily identifiable brand name; visibility and readability, both in the shop and at home; packages easy to open, close and that reclose effectively; inner wraps that effectively protect the contents; containers that are durable, stable and that will not tip over easily; stackability; reusability; packages that are as light as possible and leakproof; exact and clear directions; intelligible information concerning contents and amounts; clear directions for opening the package. When such requirements are satisfied, Miss Shurpit said, a package can be called a "showcase that sells."

Brioschi Get New Look

A simple and attractive new look has been created for Brioschi, a 78-year-old product which originated in Italy. The anti-acid is now packaged in a simple blue glass bottle by the Maryland Glass Corporation, its white cap by Crown Cork & Seal Company, with labels by Strawberry Hill Press and seals by the Celon Company.

Schering Corporation's new steroid hormone, Deronil, in a tamper proof bottle with snap cap, both produced by Wheaton Plastics. Easy removal of plastic strip leaves hinge for cap, which remains in an easy snap position.

The package formerly had a quaint "old-world" look which the manufacturers, A. Brioschi & Company, felt inappropriate for an appeal to a wider American market. The package, which was created by Lippincott & Margulies, is a radical departure, with a more ethical appearance and a design that shows up better on the shelf.

Richlyn Adds New Department

Richlyn Laboratories, Philadelphia, specialists in tablets and capsules, is adding automatic packaging, high-speed tablet makers and a new traffic department to its plant. Production flow will be stepped up by the addition of 10,000 square feet of additional space in a new wing now under construction. Mixing capacity for tablets is to be tripled, and electronic counters will insure production-line accuracy.

Debonair After Shave Lotion and Cream Hair Dressing by Daggett & Ramsdell in new 6-oz. glass bottles by Hazel-Atlas Glass Division, Continental Can. Labels by Gardner Neuman in contrasting colors; cap by Danbury Plastics.

exquisite

Pat. Pending

THESE loveliest and most elegantly proportioned of the Richford Spillproof Perfume Flacons* *now available in:*

FOUR FINISHES: Gold-Cote, Gold Mist, Gold Nugget and Clear

SIX SIZES: 1 dram, 2 dram, ½ ounce, 1 ounce, 2 ounce and 4 ounce.

Write now for samples and prices

*Trademark of the magic perfume containers that have launched millions of sales slip—their customer appeal and proved acceptance will help the sales of your product.

RICHFORD
CORPORATION

Office & Plant: 3618 Oceanside Rd., Oceanside, N. Y. Showrooms, 350 5th Ave., N. Y.

Point-of-Purchase Display Really Sells Goods

The Stephan Distributing Corporation has discovered by direct and happy experience that an effective point-of-purchase display can increase sales phenomenally. The company's hair lotion is sold only through barber shops, and the problem of meeting its competitors in food and drug outlets was aggravated by the fact that barbers sell services, not products, and that barber shops do not lend themselves to a retail operation. The company wanted to get the most from its market as well as to secure that market, but it could not appeal to the prime purchasers, women, since they seldom enter barbershops.

The solution was a floor stand that would advertise the product, sell it with minimal effort for barbers, take up very little floor space and have a definite visual appeal. The floor stand, designed by the Display Division of Gibraltar Corrugated, is red, white and green. It holds two dozen bottles of the lotion on a platform topped by a striped awning which rises from a "barber's pole." It is easily set up, which is done by the saleman, who also refills the stand, obviating the problem of storage space at the shop.

With no special promotion or price offers, the sales of the lotion increased from 25 to 45 per cent in West Coast shops and in the East by 40 per cent. Stephan's estimates that 71 per cent of total sales in the past year have resulted from the display stand; and the second order was more than 100 per cent greater than the first.

Floor display stand for hair lotion by the Stephan Distributing Corporation, by Display Division, Gibraltar Corrugated, occupies but one foot of floor space in barber shops, is done in traditional barber shop motif, color.

Flexible Packaging Review and Forecast

In a recent statement, Roland N. Ewens, chairman of the board of directors of Milprint, Inc., indicated that 1958 has seen revolutionary changes in technologies and materials in flexible packaging, the most outstanding one being the emergence of polyethylene.

Total commercial flexible packaging volume showed an increase in the first nine months of 1958, from $287,103,000 in 1957 to $292,817,000. However, as competition increased, selling prices fell off despite general cost increases. This was largely due to decreases in inventories, according to Mr. Ewens.

However, he said, the price reductions have been beneficial in the long run, since economies in the industry were enforced, with resultant new and improved products at lower cost, as well as lower price.

The future for the industry seems to be in the direction of growth and expansion, involving both increases in the use of flexible packaging and proliferation of new packaging materials. Mr. Ewens said that his own company was expecting considerable growth in early 1959.

Basic Plastics Research

The Plastics Group of the Manufacturing Chemists' Association is sponsoring basic research into the behavior of polymeric or plastic materials in the solid state. Undertaken at the Case Institute of Technology, Cleveland, Ohio, it is directed by Salby M. Skinner, Associate Professor of Chemistry at the Institute. The $15,000 annual grant is facilitating initial studies in precision tensile tests, impact tests, their correlation with measured moduli and the utilization of results to develop clues as to mechanisms involved when plastics materials fracture. Experiments are being designed to cover areas hitherto incompletely explored.

New Utility Bottle

A one-gallon utility bottle featuring a new shape and available in both conventional and high-density polyethylenes for the widest possible packaging range is now available from Plax Corporation. The container weighs but a fraction of its equivalent in glass, which provides considerable savings in freight costs for a large number of bulk products. Its design reduces cubage over traditional round shapes by 37 per cent. The finish for a standard commercial cap is 38-430 with a p-100 type pouring lip.

Mascara refill for automatic applicators by Cosmetically Yours gives 2 refills in purse-size collapsible metal tube by Sheffield Tube Corporation. Package by Dynamic Die Cutting and "bubble" by Plastic Enterprises.

Perfume Aerosol Dispensers Being Widely Introduced

The perfume aerosol dispenser is gaining favor with perfumers. The many new ones recently introduced include a spray perfume purser which hermetically seals Houbigant's Chantilly and Flatterie perfumes from air and holds over 300 metered sprays. It is refillable.

Lanvin has put out a new container that will deliver three ounces of toilet water through an unmetered valve. This, by Scovill Manufacturing Company, Cosmetic Container Division, was designed by Cartier. The valve is by Valve Corporation of America, Inc. and the bottle by Wheaton.

Vita-Minder, to keep vitamins on the table within easy reach, offered free with Rybutol's 100-size container until May 15, from Vitamin Corporation of America. Salt, pepper and vitamin set packaged in self-selling cartons.

Convenient screw closure . . .
seals tightly, opens easily

Tip-proof design . . .
jars stack quickly, securely

Many designers' colors to choose from . . .

New Plastic Jar by Owens-Illinois

. . . has all the makings of a top-priced package!

HERE in O-I's new 4½-ounce Plastic Jar you have all the advantages your salespackage needs—color and eye-appeal . . . shelf advantages retailers like . . . user conveniences customers look for. It's a package you'd expect would be priced far higher!

Smartly designed—Plastic Jars stack easily, securely. Their screw closures seal tightly, open easily. And as for color or an eye-catching color combination—you can almost name it! For, in addition to clear plastic, jars are available in a wide variety of opaque and transparent colors. (Also available with domed-top cap.)

Find out more about O-I's new Plastic Jar. Your Owens-Illinois representative will be glad to show you samples. Telephone him, today!

OWENS-ILLINOIS PLASTICS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

NEWS and VIEWS

BY TED KLEIN, PUBLIC RELATIONS DIRECTOR*

P.R. Problems

I have just seen two recent studies of public relations attitudes and practices. One, made under the auspices of a large public relations organization, deals with public relations in the pharmaceutical industry. The other, which was made by two young graduate students at one of New York's major unviersities, deals with the organization of local medical societies and their concepts of public relations.

Industry Study

The study on our industry is most revealing. Of over 100 first-class letters mailed out with a questionnaire, 17 were returned.

Of the top 20 or so pharmaceutical companies who are largely in the business of making and promoting prescription drugs, about half answered the questionnaire. Nine reported that they have a full-time director of public relations. The public relations budgets of these companies, all of which have sales well into the millions, vary from $20,000 annually to more than one million dollars. Staffs average about five employees, but one company reported a p.r. staff of 50. In almost every case, the p.r. director reports directly to the president or chairman of the board.

The question, "What do you consider the three most important problems facing the industry today from a public relations point of view?" was submitted to all who received the questionnaire. The primary problem, beyond any doubt, according to the industry's p.r. men, is the public's concern over the high cost of prescription drugs. Other answers mentioned the problem of Congressional investigations, lack of appreciation on the public's part of pharmaceutical research, and the important financial difficulties facing many medical schools.

While superficial, this study convinces me that public relations in our industry is still in its infancy. In general, most of the members of the industry have yet to appreciate the role constructive public relations plays in today's marketing of pharmaceuticals. There is no effective industry-wide public relations effort. The Health News Institute and the Health Information Foundation, with a combined annual budget of less than a million dollars, can do little to dispel the misinformation of the increasing number of industry critics. The efforts of a few leaders are not sufficient to overcome what will be a tide of ill will generated in the next few months by investigations which feed grist to the expose writers' mill.

A case in point was the indictment last year of the manufacturers of the Salk vaccine. It seemed to me that only one company, Eli Lilly, was on the ball in its public relations. The Lilly reply to the indictment via large newspaper ads in most U. S. cities was the best example of public relations in our trade I have seen in a long time. It was clear, concise and, far more important, it was in print immediately after the Government announced the indictment.

Physicians' Attitudes

The second study covers a far greater field. Two hundred and five questionnaires were sent to medical societies representing about 150,000 medical doctors throughout the country. They were addressed to the executive secretaries of the medical societies, who are usually physicians.

Ninety were returned. This impressive 44 per cent reply, in contrast to the 10 per cent reply to the industry questionnaire, indicates that physicians are apparently far more interested in public relations matters than are pharmaceutical manufacturers.

An analysis of the 90 replies indicates, that the physicians are split in half when it comes to public relations philosophy. One side wants to deal with qualified science writers of the press, for example; the other side feels that generally it is not in the public's interest to report on medical activities. While almost every society agreed that its members could address lay audiences and appear on radio and TV, 38 of those who replied said that the physician could not have a press conference to explain his work on a new drug. How a society can reconcile appearing before a lay audience, where the press could very well be represented, and not before a press conference baffles me.

Almost every medical society that answered reported having a full-time public relations committee, although the committees are far from any general agreement on basic questions of policy.

Most interesting were the comments from many of the medical society secretaries. The questionnaire must have taken at least an hour to answer, and yet many of those returned carried additional information with the reply.

Comments included such statements as: "I doubt very much if a completely satisfactory mutual aid pact between the medical profession and the newspapers can ever be formulated. And, "I am well aware that medical articles [in the press] make interesting reading, but most people end up being misinformed and confused."

Only a few of the 90 answers referred to their own society's code of ethics regarding publicity. Therefore, it seems possible that only a minority of medical societies have taken the time to formulate their organization's rules of conduct towards the press for the membership.

The most interesting reply came from a society which had no public relations committee. The secretary reported that the questionnaire so stimulated the members that forthwith they formed a p.r. committee and would then respond.

Of the many letters that came back, all complimented the students on undertaking the study of medical public relations. All but one of the 90 questionnaires returned asked for a tabulation of the results.

From these studies, it seems to me that public relations is much on the mind of physicians, and of limited interest to pharmaceutical manufacturers. It also appears that doctors do not agree on a basic policy for dealing with the press. We who must deal with both the physician and the manufacturer look forward to the day when a clearer understanding of public relations responsibilities and problems will lead to a more productive effort by both physicians and manufacturers. The results—a better informed public.

*Paul Klemtner & Company, Inc.

Colonial

CELLOPHANE PACKAGING

adds

SPARKLE

Diamond bright! This best describes the sparkling appearance of Colonial's cellophane package, the wrapper that makes an eye-appealing container for our quality dropper and assembly units.

Glistening Colonial packages are available in other materials too, such as glassine, foils and the Polymer-coated films. Individual wrapping problems are taken in stride.

Let our technicians make free samples to your exact specifications. We have a Special Services Department that will provide precision calibration in silk screening and hot stamping, too. Contact a Colonial representative listed below or write to us directly.

Specialists in Glass or Plastic Droppers and Assemblies for Nearly a Quarter of a Century

Represented by:

CHARLES E. SCHWAB	ALLEN J. GRETSCH	HARRY M. GRABER	GABLER & GABLER	RICHARDS GLASS COMPANY
122 E. 42 St.	327 LaSalle St.	811 S. 53rd St.	435 S. LaCienega Blvd.	102 Atlantic Ave.
New York 17, N. Y.	Chicago 4, Ill.	Philadelphia, Pa.	Los Angeles 48, Cal.	Toronto 3, Canada
OXford 7-0760	WAbash 2-1619	GRanite 6-6311	BRadshaw 2-2995	LEnox 2-3311

COLONIAL APPLICATOR CO.

VINELAND, NEW JERSEY

Patent thoughts and trends

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Guerlain, Corday and Lanvin

Readers of this journal will recall that in the issue of September, 1957 we considered in some detail a decision in which a New York Federal Judge held that, even though the three companies in question could point to actual statutory language to support their position, they nevertheless were guilty of monopolistic practices and violation of Section 2 of the Sherman Act. The bone of contention was whether the companies involved had the right to prevent importation of products bearing their registered trademarks without their written consent, under the terms of Section 526 of the Tariff Act of 1930. The position of the government, which was sustained by the Federal Judge, was that utilization of this section by the three companies was unwarranted and constituted a violation of Section 2 of the Sherman Act, in that it prevented importation and refilling by others who may have purchased such goods from the respective affilliated French companies which form the foreign part of a single international enterprise with the companies in question.

The three companies appealed to the U. S. Supreme Court, more or less as expected. The unusual move then occurred. The Justice Department decided to give up its victory and move before the U. S. Supreme Court to dismiss the cases. The high court granted this request.

Apparently, the Department of Justice, after a thorough review of the case, decided that its position was untenable, inasmuch as the companies were able to show that they were operating within the *exact* language of the statute in question.

Merck-Olin Mathieson Vitamin B_{12} Suit Settled

It will be recalled that this suit was originally brought in West Virginia in the Federal Court there, and the District Court held that the product claims were invalid on the ground that they covered "a product of nature." The higher appeals court then reversed this decision because it construed the patent law as not precluding the issuance of a patent upon a product of nature when it meets the requirements of the patent statutes. The two companies then tried the case before the original District Court and after trial they agreed to settle their differences by entering into a Consent Judgment. The judgment also covered U. S. Patent 2,530,416 owned by Merck, on a Process for Recovering Vitamin B_{12}. In essence, Olin Mathieson agreed that the patents were valid and that it had infringed both patents in the production of Vitamin B_{12}-Active Products.

Money-Maker Patent

From time to time we try to show that a lot of the glib statements one hears regarding patents are really just not so. This time we can "kill two birds with one stone." How often has the reader heard that big companies are unfair to inventors and are only interested in picking the brains of the inventor without giving him anything in return? Also, we all doubtless have heard that patents are valueless these days.

A case that burst both bubbles is one which Professor Niederl brought against Rohm & Haas in order to obtain royalties additional to those which he already had received. According to the decision of the New York Federal Court, Professor Niederl received well over $280,000 worth of royalties from Rohm & Haas in connection with a process for making certain octyl phenols. This is so even though Professor Niederl was unsuccessful in the particular litigation referred to. The litigation revolved around an interpretation of a license agreement entered into with reference to a patent application filed by Professor Niederl in 1933, the application bearing Ser. No. 663,247.

The pertinent language of the agreement, paragraph 5, was as follows:

"After the issue of a patent on Ser. No. 663,247 royalties on products covered by it will be as follows:

"(a) On products sold for pharmaceutical purposes 10 per cent of the net sales price.

"(b) On products sold for other purposes 5 per cent of the net sales price.

"(c) On products used by Rohm & Haas or its associated companies 3 per cent of the cost price or one-half (½) a cent a pound, whichever is higher."

The Court construed this language as limiting royalities to *products* covered by the patent when issued. Specifically, the Court ruled as follows with respect to the meaning of the royalty provisions:

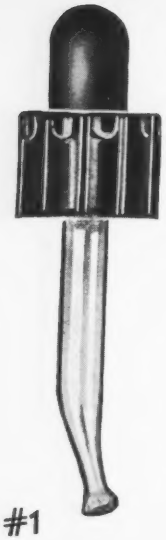
"(a) Products covered by the patent which are sold for pharmaceutical purposes (for which the royalty is 10 per cent of the net sales price);

"(b) Products covered by the patent which are sold for purposes other than pharmaceutical (for which the royalty is 5 per cent of the net sales price);

"(c) Products covered by the patent which are used by Rohm & Haas or its associated companies (for which the royalty is 3 per cent of the the cost price or one-half a cent a pound, whichever is higher)."

One of the fundamental issues was whether and to what extent Professor Niederl was entitled to royalties on reaction products of octyl phenol not falling within the scope of his patent. Professor Niederl contended that he was entitled to royalties under paragraph 5(a) and (b) of the contract for products sold by Rohm & Haas which are not covered by the claims of the licensed patent—where these products are made from chemicals which *are* covered by the patent claims. Rohm & Haas, on the other hand, contended that the words "covered by it" neces-

*Richards and Cifelli, Newark, New Jersey



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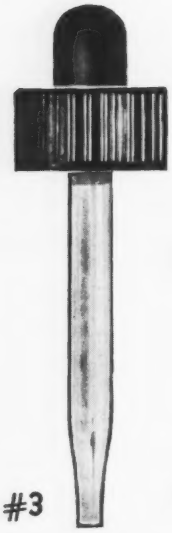

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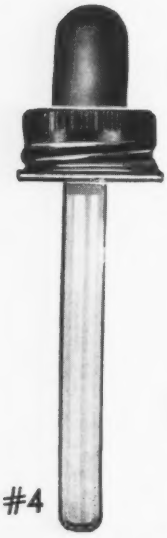

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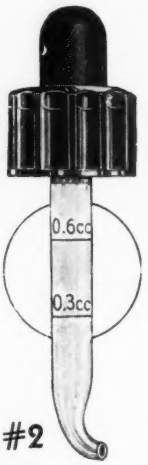

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sarily limited its liability for royalties under (a) and (b) to sales of products actually covered by the patent and that when it made and sold unpatented reaction products employing chemicals covered by the patent claims it was entitled to report such sales as a "use" of the patented chemicals under paragraph 5(c) instead of as a transaction under paragraph 5(a) or 5(b). In other words, Professor Niederl wanted this situation to be covered by either the 10 per cent or 5 per cent royalty measure of paragraph 5(a) or (b) respectively; whereas Rohm & Haas insisted that the 3 per cent base of paragraph 5(c) applied. The Court adopted Rohm & Haas's contention that when octyl phenol is taken and used in the manufacture of a derivative or reaction product the hydroxyl group is destroyed in the reaction. In coming to this decision the Court was influenced by the fact that all during the period of the contract this construction by Rohm & Haas was followed and apparently Professor Niederl at no time objected. In this connection it may be added that Professor Niederl, according to the opinion, raised no question until after the contract expired.

Dermatological Mixture of Ion-Exchange Resins

Rohm & Haas recently obtained U. S. patent 2,857,311, covering a therapeutic composition comprising a mixture of ion-exchange resins.

The versatility of these resins is such that we might consider some of their principal uses before taking a close look at the patent. As is well known, positively charged particles are termed cations and negatively charged particles are termed anions. Cation exchange resins actually trade their positive ions for the positive ions in solution; whereas anion exchanges appear to bind the entire acid molecule in an insoluble form. When a cation exchanger reaches its capacity to acquire ions from solutions it can be regenerated by bringing the material in contact with another solution which, through a second exchange, will restore the original type of ion. Anion exchangers can be regenerated by treatment with a base such as sodium carbonate, which neutralizes the acid and frees the exchanger for further adsorption.

One of the first practical uses of these resins was in water-conditioning. As is well known, raw water has many dissolved chemical compounds in it, such as calcium and magnesium salts and silica. The ring around the bath tub is due to the formation of insoluble soap salts. Industrially, the presence of the compounds of the aforementioned salts is often undesirable. For example, pipe lines may become clogged with scale when water contains even small amounts of silica or calcium.

To soften the water cation exchangers are used. These relinquish sodium and take on the hard magnesium and calcium ions. When the capacity of the cation exchange resin is exhausted, the resin is regenerated by running sodium chloride solution through it.

Other industrial applications that may be mentioned involve the processing of sugar juices, production of streptomycin, quinine, scopolamine and vitamins.

We now turn to U. S. patent 2,857,311, issued to Thurmon and Kunin. The invention concerns dusting powders, lotions and ointments, which contain as the primary active agent an intimate mixture of three kinds of ion exchange resins in finely divided form. According to the patentees, the mixture possesses valuable therapeutic properties and is effectively applied to external body surfaces for preventing, correcting or overcoming venenation caused by the active principle from such botanical sources as poison ivy or poison oak.

In a previous patent, U S. 2,684,321, the inventors described a skin treating mixture of ion-exchange resins of four kinds—sulfonated ion-exchange product in hydrogen form, quaternary ammonium exchangers in hydroxy form, carboxylic resin exchangers in hydrogen form and amino anion-exchange resins in basic form.

The inventors noted that the four-component mixture covered by U. S. patent 2,684,321 has some drawbacks. For one thing, it is too stimulating in some instances. Also it was found that the mixture of the four components reacts neutrally, even with extremely wide variations and proportions of compounds. The inventors feel that it is more desirable to use preparations which are mildly acidic since the normal skin surface is acidic.

Accordingly, the inventors' present patent represents an improvement and utilizes "an intimate mixture of fine particles of a sulfonated ion-exchange material in hydrogen form, a carboxylic cation-exchange resin in hydrogen form, and an anion-exchange resin of intermediate base strength which provides a useful agent for dermatological use. It can adsorb or absorb toxic agents and reaction products and restore skin surfaces to a mildly acidic state, thus permitting healing and normal growth to proceed without irritation or excess stimulation."

Example 1 dealing with the preparation of a lotion is reproduced below:

Example 1. "There are mixed in finely divided form 35 parts by weight of an insoluble resin having sulfonic acid groups, said resin being a cross-linked copolymer from styrene and divinylbenzene, having a capacity of 4.5 m. e. per gram of dry resin, 35 parts of cation-exchange resin prepared from methacrylic acid and divinylbenzene (95.5) by copolymerization, having a capacity of 10.5 m. e. per gram of dry resin, and 30 parts of a basic resin prepared by copolymerizing methyl acrylate with 2 per cent of divinylbenzene, reacting this copolymer with excess of diethylenetriamine up to 200° C., and washing out all soluble material. This basic resin gives a *p*H, when one gram of the resin is suspended in 25 ml. of an aqueous 0.15 N sodium chloride solution, of about 10.5 and has a capacity of 8.7 m. e. per gram of dry resin. The resulting mixture is wet with water, drained, and mixed with aqueous 66 per cent glycerine to form a lotion about 50 parts of the moist mixture being incorporated with 100 parts of the 66 per cent glycerine, the parts being by weight. This has a *p*H of about 6.

"Similar lotions are readily prepared by mixing 10 parts of the moist mixture and 90 parts of 66 per cent glycerine or 15 parts of mixture and 85 parts of the glycerine. All of these lotions are effective in counteracting the effects of poison ivy."

(*Continued on page 258*)

Small size Angel Face—now selling at top rates in molded plastic packaging, created and produced by Augusta Plastics Inc., Bronx, N. Y., is displayed here by Mr. Warren Dubin, Brand Manager (right) and Mr. Ralph Schusler, Asst. Purchasing Manager of Chesebrough-Pond's Inc.

Chesebrough-Pond's Inc.

to

Augusta Plastics

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Sales Offices in Principal Cities

Left to right: Richard A. Anderson, vice-president and director, Faichney Instrument Corporation; Kenneth B. Arrington, general product manager, Toilet Articles Division, Colgate-Palmolive Company; Robert M. Aude, vice-president and general manager, Heyden Chemical Division, Heyden Newport Chemical Corporation; John M. Duncan, eastern regional sales manager, Hazel-Atlas Glass Division, Continental Can Co.

NEWS...

Appointments and Promotions

Richard A. Anderson, formerly vice-president and director of marketing for Bristol Laboratories, has been in charge of **Colgate-Palmolive** director of the **Faichney Instrument Corporation,** producer of clinical thermometers.

Kenneth B. Arrington, who has been in charge of **Colgate Palmolive Company**'s Colgate Dental Cream since 1952, has been appointed general product manager of the **Toilet Articles Division** of that company.

Robert M. Aude, who has been with the **Heyden Newport Chemical Corporation** since 1953, has been appointed vice-president and general manager of the **Heyden Chemical Division** of that corporation.

The **Union Carbide Chemicals Company,** division of **Union Carbide Corporation,** has appointed Victor H. Boden manager of product marketing for the division. He heads a group of five product sales managers: Robert C. Boltz, recently promoted from Eastern Division sales manager; Howard L. Harwell, recently promoted from his position as assistant product sales manager; Robert B. Leonard; Frederick J. Rauscher and John M. Russ. Merritt A. Bigelow, Jr., has been named assistant product sales manager under Mr. Russ; Philip G. Magnusson, formerly sales manager with Union Carbide Plastics Company, will assist Mr. Boltz; and L. D. Polderman, previously in technical service, will assist Mr. Harwell.

Lester D. Berger, Jr., has been appointed assistant manager of the new chemicals group of Union Carbide Chemicals Company. Product managers Sebern G. Sellers and Eugene P. Fisler, Jr., will assist him. The Development Department of the company has appointed Norman R. Cox, Dr. Robert G. Kelso and Dr. Fred W. Stone as group leaders.

Winthrop Laboratories has made appointments to fill openings created by the firm's establishment of four new sales divisions: H. Brock, manager of the new Los Angeles "B" division; J. L. Jones, manager of the Indianapolis division; Del Blomgren, manager of the new Milwaukee division, succeeded in his former post as manager of the Detroit division by P. G. Gilles; and V. R. Wheelhouse, manager of the Cleveland division, replacing Charles Heverin, who becomes Buffalo division manager. Brin Evans, former Buffalo manger, takes over the new Pittsburgh division.

T. H. Caldwell, Jr., has been made manager of the new sales office of **The Dow Chemical Company** in Charlotte, N. C. Mr. Caldwell was formerly manager of automotive chemicals sales.

George J. Clausen has been appointed export manager of **Schenlabs Pharmaceuticals, Inc.** With the company since 1946, Mr. Clausen will be dealing with distributors and licensees in more than 60 foreign nations.

Dr. Eugene A. Conrad, previously an instructor at Bowman Gray School of Medicine, has joined the scientific staff of the **Sterling-Winthrop Research Institute** as research associate in pharmacology.

Joseph Daffner, who was formerly with Lanolin Plus as director of advertising, has become general manager and director of sales of **Blair Laboratories, Inc.**

Harold K. Daniels has been elected vice president, personnel relations, and Carl Johnson, vice president, advertising and public relations, by **Parke, Davis & Company.** Mr. Daniels has been director of personnel since 1951, and Mr. Johnson, who has served the sales division for 26 years, has been in charge of public relations since 1957.

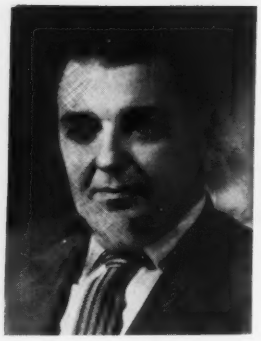
The company has instituted a seven-member President's Advisory Council, appointing seven sales representatives to constitute it: Lloyd N. Stoner, Glenn G. Groves, S. M. Dripps, G. Fred Johnson, William E. McCormick, H. J. Schriever and Joseph B. Williams.

Fluid Chemical Company has named A. T. "Gus" DeVera, Jr., as district sales manager. He was formerly eastern sales manager of American Plastic Corporation.

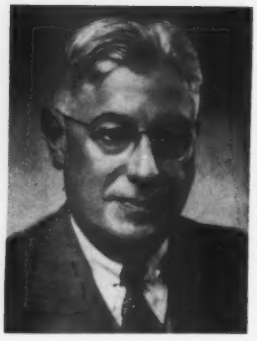
Wesley M. Dixon, Jr., who has been executive vice-president of the foreign subsidiaries of **G. D. Searle & Company,** has been named president of the firm's foreign subsidiary companies.

John M. Duncan has been promoted from New York district sales manager of the **Hazel-Atlas Glass Division of Continental Can Company** to Eastern regional sales manager. Succeeding him as New York district sales manager is Walter D. Morton, with the company since 1949.

The manager of the new Customer Technical Services department of **Armstrong Cork Company's Glass and Closure Division** is E. C. Emanuel, previously general manager of Glass and Closure Products Research. Dr. John M. Sharf has been promoted from assistant general manager to general manager, succeeding Mr. Emanuel.



Left to right: Fred C. Theile, research administrator, Shulton, Inc.; William W. Huisking, president, and Charles L. Huisking, chairman of the board, of Chas. L. Huisking & Company, of which Glyco Chemicals, Clintbrook Chemical Company and Peder Devold Oil Company have become operating divisions; Dr. Eugene McCauliff, vice-president of the new Glyco Chemicals Division of Huisking.



Dr. George J. Foss has joined **Anchor Hocking Glass Corporation** as director of the **Package Engineering and Research Laboratories.** He was previously with Spencer R. Stuart & Associates in Chicago. H. E. Stover, who has been with Anchor Hocking since 1938, has been named manager of mechanical sealing machine development and customer line installations.

Bernard Gould has been appointed an assistant to Walter F. Silbersack, president of **American Home Products Corporation.** Mr. Gould had been vice-president in charge of sales and advertising for Associated Products, Inc.

Alex Guerry, Jr. has become president of the **Chattanooga Medicine Company,** succeeding the late Lupton Patten. Patten Abshire, secretary of the company, has been named a director.

Frederick C. Hitchcock, Jr., has been appointed assistant to George L. Schultz, president of **Shulton, Inc.** The company has also announced appointment of Fred C. Theile as research administrator.

Dr. Roger A. Hoffman has been named manager of production of **Merck Sharp & Dohme (India) Private Ltd.,** Indian subsidiary jointly owned by Merck & Company and an Indian company. Richard T. Smith, M.D., has been named director of medical service for **Merck Sharp & Dohme Research Laboratories,** a division. Dr. Smith joined the firm in clinical research in 1951, and is currently serving as director of the Department of Rheumatology at the Benjamin Franklin Clinic and also as an associate in medicine at the University of Pennsylvania. Merck has also recently appointed Harold A. Rockwell treasurer.

Harry S. Howard, chairman of **Wyeth Laboratories,** has retired after 43 years in the industry. He continues as a director of **American Home Products Corporation,** the parent company. **Wyeth International Ltd.,** has appointed Frank P. Gage as financial director. The Laboratories have also announced appointment of Dr. Leonard C. Riesch as managing director of the Philadelphia production plant, succeeding M. R. Brenner, who has retired after 35 years with the firm, and Dr. Robert S. Warner as medical assistant to Stuart V. Smith, the vice-president and director of sales.

Donald S. Carmichael has resigned as secretary and general counsel of **Diamond Alkali Company.** James A. Hughes, vice-president of the company, has been elected secretary in addition to that position, and John A. Wilson, who has been assistant secretary since 1956, has been appointed director of law.

William W. Huisking has been elected president and Charles L. Huisking has been appointed chairman of the board of **Chas. L. Huisking & Company,** which has recently taken on Glyco Chemicals, Clintbrook Chemical Company and Peder Devold Oil Company as operating divisions. Dr. Eugene McCauliff has been appointed vice-president of the Glyco Chemicals Division.

Dr. David Jorysch, assistant vice-president and technical director of the flavor division of **H. Kohnstamm & Company,** has been elected to the board of directors.

Dr. Kurt S. Konigsbacher is the newly appointed associate development manager for the **Evans Research and Development Corporation.** He has been with the firm since 1950.

Robert M. Kraft, associated with **Eli Lilly and Company** since 1950, has been named assistant director of the market research division. Succeeding him as manager of the marketing studies department is G. Wallace Robb, who has been in that division since 1947. Richard D. Wood is the manager of the newly created department of export market research. He has been with the product addition studies division. Vern H. Hakes, formerly manager of Lilly's Minneapolis district, has become administrative assistant to the vice-president, industrial relations.

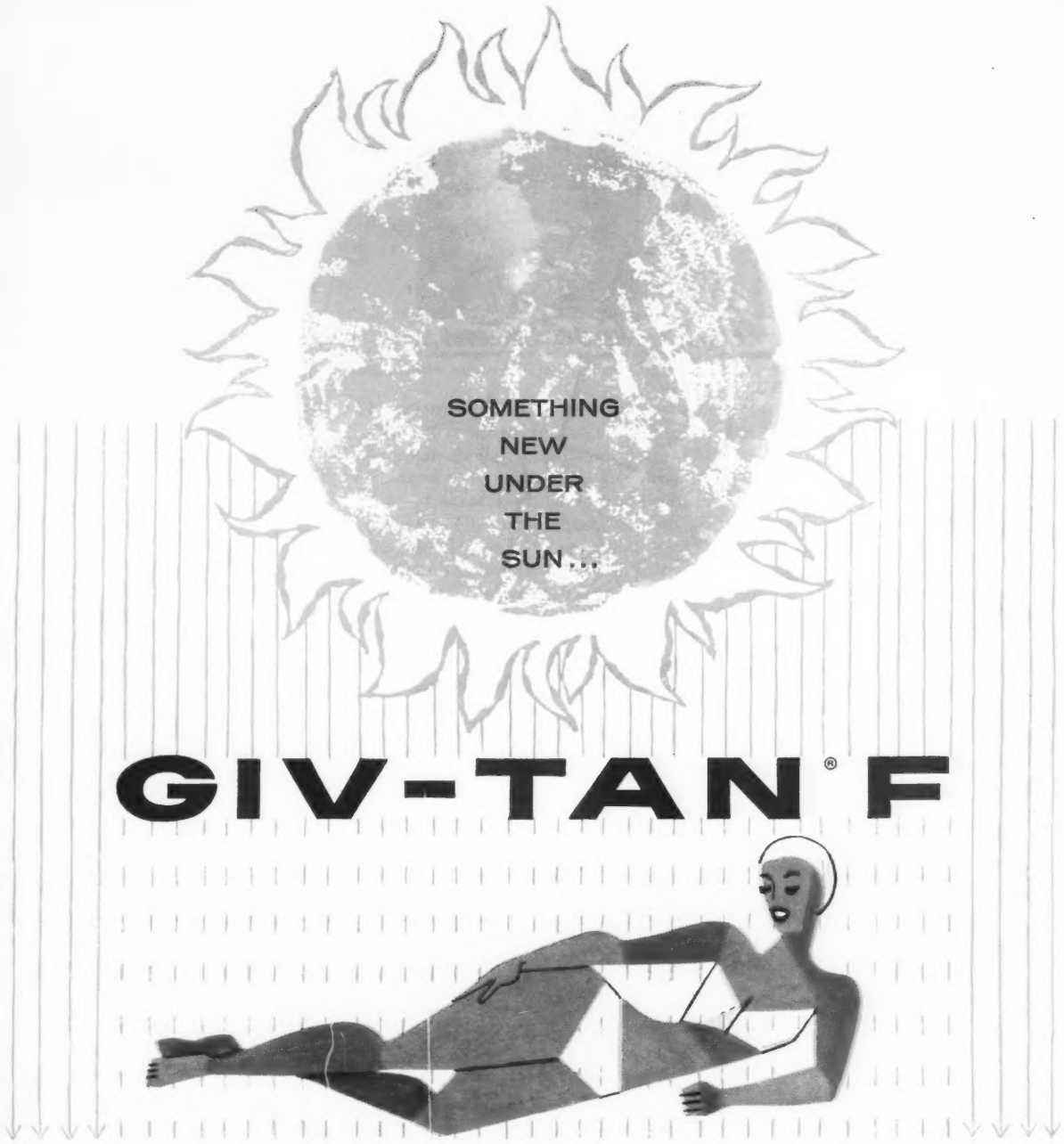
The **Pitman-Moore Company** has appointed Dr. John E. Lawlis and Dr. James L. Bittle to the virus research laboratory, the former in cancer virus, the latter in virology.

Ralph Lefcourt, a manufacturers' representative in the New York area for twenty years, has been appointed representative for the **American Pharmaceutical Company** in Brooklyn and eastern New York.

John E. Logun, formerly associated with E. R. Squibb & Sons and Dome Chemicals, Inc., has joined **Dunbar Laboratories,** division of **Chemway Corporation,** as research chemist.

The **Purdue Frederick Company** has appointed four new executives: Dr. S. J. London becomes a vice-president in addition to his position as medical director; George Upton, formerly western district supervisor, is now western regional sales manager; Theodore R. Reston, regional sales manager, is now assistant sales manager; and Leon Worth has been promoted from special representative for Dallas to district supervisor.

Dudley F. Lum, as a step towards his retirement, has relinquished his duties as manager of the Chicago



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Left to right: Dr. David Jorysch, a newly elected member of the board of directors, H. Kohnstamm & Company (see page 206); Robert L. Williams, new manager of the Chicago branch office, Giwaudan-Delawanna, Inc., successor to Dudley F. Lum, who has retired as manager but will continue to serve his old customers in the Chicago area.

branch office of **Givaudan Delwanna, Inc.** and its associated companies, **Givaudan Flavors, Inc.,** and **Sindar Corporation.** Robert L. Williams, associated with Givaudan since 1948, has been appointed to succeed him. Mr. Lum, who has been manager of the Chicago office since 1927, will continue to serve his old customers in the area.

Andrew A. Lynn, **Chesebrough-Pond's** vice-president, domestic marketing, is to become president of **Prince Matchabelli, Inc.,** a subsidiary, on April first, in addition to his duties at Chesebrough. Owen Stoner, now president of Matchabelli, will return to **Vick Chemical Company** as vice-president, as was agreed upon at the time of Chesebrough's purchase of Vick's cosmetic interests. Paul P. Woolard has already been promoted from vice-president of sales for Matchabelli to vice-president of marketing at Matchabelli.

S. B. Penick & Company has appointed John H. MacDonald plant superintendent for the Lyndhurst, N. J. plant. He has been with the company for a year.

Harry D. McNeeley, formerly vice-president of **Tennessee Eastman Company,** has been named executive vice-president of that division of **Eastman Kodak Company.** He also assumed new duties as a vice-president of three Eastman subsidiaries, **Eastman Chemical Products, Inc., Holston Defense Corporation** and **Holston Trading Corporation.** In addition, Mr. McNeeley became a vice-president of the **Texas Eastman Company** division, and a member of the board of directors of the Holston Trading Corporation.

James P. Measday, general sales manager of **Ivers-Lee Company,** has been appointed advertising manager, in addition to that position. Mr. Measday has been with the firm since 1948. Richard W. Miller, with Ivers-Lee as a salesman since 1950, has been appointed field sales manager.

Hank Meyers has joined **Turner Hall Corporation** as sales manager of the corporation's **Rilling Division.**

Salvatore F. Palladino, formerly an instructor in chemistry at Delahanty High School, has joined the industrial chemicals department of **Commercial Solvents Corporation** as a member of the sales staff in the mid-Atlantic district office. Ray Swan has joined the sales staff in the Los Angeles district office.

M. W. (Pete) Pully has become marketing director for the **S. E. Massengill Company.** He was formerly district sales supervisor for the firm. J. H. Morris, Jr., has been promoted from a district sales supervisor to West Coast regional sales manager. L. L. Green, who has been serving as regional sales manager for the past few months, continues as general manager of West Coast warehousing and shipping operations.

Howard F. Roderick has been appointed president of the **Sumner Chemical Company,** division of **Miles Laboratories, Inc.,** and elected a vice-president and director of the parent company.

Norman A. Sattler has become comptroller of **Allied Chemical Company's General Chemical Division.** He has been with the division for 12 years. Loy R. Whiteside has been made manager of the Chicago sales branch of Allied Chemicals **Solvay Process Division,** and Merle F. Koblish has been appointed sales manager of the **General Chemical Division,** succeeding Arthur E. Foell,

Left to right: John H. MacDonald, new superintendent of the S. B. Penick & Company's Lyndhurst, N. J. plant; James P. Measday, general sales manager and advertising manager, Ivers-Lee Company, and Richard W. Miller, newly appointed a field sales manager, also for the Ivers-Lee Company.

Time to get ready with your

Aerosol Suntan Preparations

The Schimmel aerosol laboratory has a wide range of perfumes which have been exhaustively tested for suitability in each type of preparation.

Send us details as to your product and we will be glad to submit samples.

schimmel & co., inc.

601 west 26th street, new york 1, new york

who has retired. Mr. Koblish has been with the company for 30 years, most recently as assistant manager of sales.

Leo Schulmann, a 20-year veteran of Fleuroma's sales staff, has been appointed general manager of the firm's new affiliate, **Essencias Fleuroma Limitada,** Sao Paulo, Brazil. **Fleuroma, Inc.,** has also appointed Eric W. Zielenziger as foreign operations manager. Andre J. Mallegol has joined the sales staff, covering metropolitan New York and Pennsylvania.

E. Ned Schultz, M.D., formerly a senior research fellow of the University of Southern California in Los Angeles County General Hospital, has been appointed associate director of the medical department of the **Armour Pharmaceutical Company.**

Morton W. Scott, formerly with the Research Laboratory, Smith, Kline & French, has joined the **Research Division, Johnson & Johnson** as senior research scientist in the pharmaceutical product development section.

Pharma-Craft Corporation, affiliate of **Joseph E. Seagram & Sons, Inc.,** announced that Edward Sheckman, M.D., a director of the affiliate, has been named interim general manager; and Robert Bragarnick, vice-president, marketing of the parent company, will supervise Pharma-Craft advertising during this period. Frank F. Bell, Pharma-Craft president since 1954, and Ralph C. Robertson, director of advertising, have resigned.

Harold G. Shelton, formerly director of marketing, has been appointed general manager of the **Dyestuff & Chemical Division of General Aniline & Film Corporation,** replacing Philip M. Dinkins, who has been elected president to succeed John Hilldring, now chairman of the board and chief executive officer. Mr. Dinkins was previously vice-president of General Aniline and general manager of the division.

Olin Mathieson Chemical Corporation has appointed Dr. Sidney Siggia manager of central analytical services in New Haven. A specialist in analytical chemistry, Dr. Siggia had been manager of analytical research and services for General Aniline & Film Corporation.

The following staff members of **J. B. Roerig and Company,** division of **Chas. Pfizer & Company, Inc.,** have been promoted to newly created posts: Bernard H. Smith, from product manager to manager of the division's new marketing department; Robert E. Roeker, from administrative assistant to the director of sales, to assistant manager of the marketing department; Louis J. Gill, from sales service manager to government sales manager; Frances Himebaugh, from headquarters' office manager to budget control officer as well; Richard E. Arnold, from associate director of conventions to sales promotion and convention manager; and Charles C. Rabe from manager of special products to professional relations manager.

Harry A. Spangenberg has been promoted by the **Norwich Pharmacal Company** from control chemist to assistant manager of formula and label control.

Dawne T. Ten Eyck, a member of **National Can Corporations** sales department, has been appointed St. Louis sales representative to succeed David Clark Statler, who has retired. Mr. Statler has been with the firm since 1946.

Eaton Laboratories has promoted Donald H. Stevenson from medical representative in Harrisburg, Penna., to manager of District 17, with headquarters in Cleveland.

Dr. Cornelius H. Sullivan, senior clinical research associate of **Ciba Pharmaceutical Products, Inc.,** has been appointed to the new position of assistant director of clinical investigation.

The **Atlas Powder Company's Chemicals Division** has announced the following sales department changes: Henry C. S. Swab has been promoted from manager of the New York sales office to general sales manager of the Aquaness Department, headquarters in Houston; William A. Kessel, previously assistant regional manager of the New York office succeeds Mr. Swab; William R. Lucas, assistant regional manager, Wilmington, has become assistant regional manager of New York; William P. Hillman, Jr., assistant to the New York field sales manager, has been named assistant regional manager, Wilmington; and Joseph J. Byrne, salesman in the New York office since 1951, has become assistant to the field sales manager, succeeding Mr. Hillman.

E. S. Thomforde has been named vice-president and general manager of **Bard-Saratoga Laboratories, Inc.**

E. S. THOMFORDE

Mr. Thomforde was formerly head of the G. F. Harvey Company, Inc.

The **Domestic Sales Division, Schering Corporation,** has made the following promotions: Harold N. Torkelson, from sales training coordinator to domestic sales manager; Donald T. Rush, from sales representative to the newly created position of administrative assistant to the vice-president for sales; Norman E. Wanek, field and trade promotion manager; H. Hayward Thresher, product planning manager; George E. Hlavin, trade sales manager; J. Dennis Sullivan, chain store sales manager; and Bernard I. Sherman, sales aids manager.

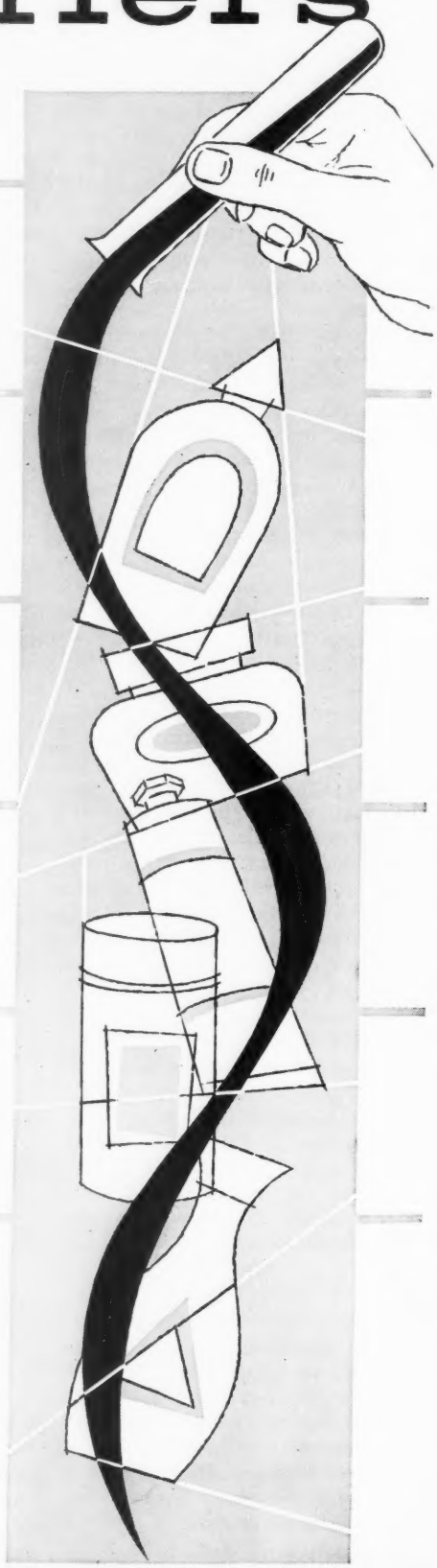
Vernon B. Tucker has been appointed regional sales manager by **Mallinckrodt Chemical Works** for Michigan, Indiana, Ohio, Kentucky, Tennessee, Arkansas, Alabama, Mississippi, eastern Illinois and western West Virginia and Georgia. Mr.

WARREN F. MICHENER

Tucker was formerly an assistant regional sales manager. Warren F. Michener, previously assistant **West-**

Emulsifiers

For ease of use — For dependable results —
For solving difficult problems



Tegacid...

Glyceryl Monostearate — Acid Emulsifying. For anti-perspirant — deodorant creams, lotions and ointments — all greaseless, medicated formulations.

Tegin...

Glyceryl Monostearate — Self Emulsifying. For neutral greaseless creams, lotions, ointments, suntan creams.

Tegin 515...

Glyceryl Monostearate — Non Self-Emulsifying. Used in conjunction with auxiliary emulsifiers.

Tegin P...

Propylene Glycol Monostearate — Self Emulsifying. For greaseless creams—brushless shave, foundation, suntan: lotions — foundation, suntan, ointments.

Lanolin Absorption Bases

PROTEGIN X.....ISO-LAN

For Creams, Lotions, and Ointments

• TEGOSEPT PRESERVATIVES **• ANTIOXIDANTS**
ESTERS OF PARAHYDROXYBENZOIC ACID **PROPYL GALLATE** **ETHYL GALLATE**

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CHEMICAL CORPORATION

153 Waverly Place, New York 14, N. Y.

SALES REPRESENTATIVES

CHICAGO • LOS ANGELES • ST. LOUIS • MONTREAL • TORONTO

ern **Division** sales manager, has been appointed sales manager, Western Division, succeeding Walter S. Keutzer, who has retired after 49 years with the company. T. A. Wamstad has been named assistant regional sales manager of the Chicago office.

Albert R. Wayne, vice-president, finance, for **Mead Johnson & Company** since 1956, has assumed the new position of vice-president, operations, of **Mead Johnson International,** foreign operations division. Robert H. Kinderman, secretary of the company since 1955, has been promoted to vice-president, finance.

Paul E. Weber is now assistant general manager of the **Chemical Sales Division, Charles Pfizer & Company.** He was previously sales manager of the division. Norman A. Grimm, midwestern regional sales manager since 1944, has been made manager of trade relations for the division and John E. McVeigh has become manager of the midwestern region. He has served as eastern regional manager. Dr. Robert John Stedman has been appointed to the chemical research and development department at Brooklyn as a research chemist. He had been a research associate at the University of Toronto.

Alfred A. Whittaker has been promoted from director of marketing, **Bristol-Myers Products Division,** to vice-president, market research.

McDonnell Resigns

Dr. John McDonnell has resigned as vice-president of Schering Corporation. He served his relations with the company on January 30 and left for a Florida vacation, saying that he would consider his future plans on his return.

Huisking to Produce Synthetic Camphor

Chas. L. Huisking & Company has purchased from E. I. du Pont de Nemours & Company its patents, processes, formulas and other materials for the production of medicinal and technical grade synthetic camphor.

Huisking will have sufficient camphor of du Pont manufacture to supply demand until its own plant is in operation. As of February first, all camphor distribution is through the Huisking company.

THEODORE OSTROWSKI

New York SCC Officers

The New York Chapter of the Society of Cosmetics Chemists recently installed Theodore Ostrowski as chairman. Chief chemist at Monteil Manufacturing Company, Mr. Ostrowski is a charter member of the chapter.

Other officers for 1959: chairman-elect, John Longfellow, Colgate-Palmolive Company; secretary, Saul Bell, Prince Matchabelli; and treasurer, Martin Katz, Revlon, Inc.

At an earlier meeting of the chapter, past chairmen were presented with plaques in recognition of their services, guidance and leadership. The plaques were presented to Michael Stanton, founder and first chairman; William Lambert, 1956 chairman; and Warren Dennis, 1957 chairman.

Mallinckrodt Nuclear Corporation Established

Mallinckrodt Chemical Works has established a separate company, Mallinckrodt Nuclear Corporation, to carry out its privately owned nuclear fuels business. The new, wholly owned subsidiary is taking over the Mallinckrodt Special Metals Division, with Frederick Belmore, head of the Special Metals Division, as vice-president, director and general manager. Joseph Fistere, president of Mallinckrodt Chemical Works, is to serve also as president and director of the subsidiary.

Leberco Expands Laboratory

Leberco Laboratories, Roselle Park, New Jersey, has begun a new addition to the pharmacological laboratory, which will extend the firm's facilities for pharmacological and toxicological studies for the drug, food and cosmetic industry.

Merck Establishes Firm in India

Merck Sharp & Dohme (India) Private Ltd., has been established in India with Dr. Roger A. Hoffman as manager of production. The Indian subsidiary, which is owned jointly by Merck & Company and an Indian company, will be the largest ethical drug manufacturing operation in India except for one Government-owned firm. The plant will be located in the Bombay area and will have the capacity to supply substantially all of India's present requirements for vitamin B_{12} and steriod hormones, and will produce many other medicines as well.

Dr. Hoffman began with Merck in 1942 as a chemist, and most recently has been manager of process development, Merck Chemical Division.

Schering Acquires Veterinary Company

Schering Corporation has acquired American Scientific Laboratories Inc., Madison, Wisconsin, by issuance of Schering common stock in exchanges for all outstanding common and preferred stock of American.

The company produces veterinary biologicals, pharmaceuticals and pesticides. It will be operated as a wholly owned subsidiary of Schering, continuing under the present management, Hubert D. White as president, Kenneth T. White, executive vice-president, and Dr. Philip G. White, vice-president and director of research.

Fleuroma Opens Brazil Affiliate

Fleuroma, Inc., has established an affiliate, Essencias Fleuroma Limitada, in Sao Paulo, Brazil, with Leo Schulmann, who has been on Fleuroma's technical staff for a decade, serving as general manager.

Crippen Labs To Move

Crippen Laboratories, Inc., a subsidiary of Foster D. Snell, Inc., will occupy a newly purchased building at 1500 Guilford Avenue, Baltimore 2, Md., by March first.

Sole Appoints Monroe-Danford

The Sole Chemical Corporation has announced the appointment of Monroe-Danford & Company, Weehawken, New Jersey, as technical representatives in the area of New York State and upper New Jersey.

N. Gesolade Receives Award

Nicholas S. Gesolade, secretary of the New York State Pharmaceutical Society, has been elected retail drug field's Man of the Year 1958 by *American Druggist*, for making the most constructive contribution to the drug trade during the year. His election was specifically for his leadership in the fight by New York State pharmacists to prevent weakening of the law barring sales of potent medicines in non-drug stores, and his action as chairman of the House of Delegates of the American Pharmaceutical Association in calling for a national strategy meeting of those who believe that drugs should be sold only in pharmacies.

Cusack 45 Years with Fritzsche

A luncheon celebrating Martin V. Cusack's entrance into the Quarter-of-a-Century Club was recently held at New York's Charles Restaurant. Mr. Cusack heads the receiving department. He was presented with a scroll and a Government bond by Fritzsche executives, and a gold engraved wristwatch by his fellow employees.

C. Kircher Abroad

Charles Kircher, vice-president and director of lipstick and related research, Kolmar Laboratories, Inc., has left for France, England and Germany, where he will spend six weeks visiting Kolmar plants.

Foragers Celebrate 60 Years

The Foragers of America celebrated their 60th anniversary at New York's Stork Club in January. H. Gregory Thomas, president, Chanel, Inc., was toastmaster.

Huisking Merges its Corporate Enterprises

Glyco Chemicals, Clintbrook Chemical Company and Peder Devold Oil Company have been made operating divisions of Chas. L. Huisking & Company, in a merger of affiliated corporations including its investment corporation, according to William W. Huisking, president.

Mr. Huisking has been elected president, Charles L. Huisking has been appointed chairman of the board and Dr. Eugene McCauliff, vice-president of the Glyco Chemicals Division.

Huisking began in 1910 as a drug brokerage activity, developing into a distributor for various agencies. Later, the enterprise began manufacturing medicinal chemicals under the name of Clintbrook Chemical Company; and, in 1958, the assets of Glyco Products Company, Inc., were acquired. Glyco now produces chemicals for the food, plastics, paper, electronics, metals, paint and textile industries. Clintbrook produces fine chemicals, alkaloids, oils and vitamin oils.

Perfumers Elect Officers

The American Society of Perfumers has elected the following officers for 1959: chairman, Jacques Masson, Flam-Haft Labs; president, Dr. Oliver L. Marton, Shulton; vice-president, Bernard Polak, Polak Frutal Works; secretary, Harry C. Saunders, Givaudan Corp.; treasurer, Edwin D. Morgan, Jr., Lever Bros.; directors, Herbert Sommer, Matchabelli, Inc., Walter Lengsfelder, Fleuroma, Elmer L. V. Sulik, van Ameringen-Haebler, John Hancock, Warner-Hudnut.

J. J. Toohy (right), general manager, E. R. Squibb & Sons, presents W. R. McHargue, vice-president and director of medical relations for the firm, with a 25-year pin, at a luncheon to mark his years with Squibb. Mr. McHargue began as advertising assistant, sales department.

FLORIN J. HAILER

Hailer Retires

Florin J. Hailer, vice-president and controller of purchases for Rexall Drug Company, has retired after 47 years with the company. He is residing at 55 Forest Avenue, West Newton 65, Mass.

E. Vles Celebrates 40 Years With Polak's Frutal Works

Erik Vles, treasurer and sales manager of Polak's Frutal Works, Inc., was recently honored on completion of his fortieth year with the company, at a dinner at the Orange County Golf Club during the company's annual sales meeting.

Winthrop Forms New Divisions

Winthrop Laboratories has established four new sales divisions in the United States as a part of its expansion of pharmaceutical products distribution and service. The divisions are in Los Angeles, Indianapolis, Milwaukee and Pittsburgh, and the new managers are, respectively, H. Brock, J. L. Jones, P. G. Gilles, and V. R. Wheelhouse.

Essential Oil Association Elects 1959 Officers

At its 28th annual meeting in January at the Hotel Savoy-Plaza in New York City, the Essential Oil Association elected officers for the coming year: president, Gert Keller, Schimmel & Co.; vice-president, J. Cassullo, Fritzsche Bros.; secretary-tresurer, F. F. Dittrich, Ungerer & Co. The new executive committee includes P. J. Coutin, Coutin Associates; R. E. Horsey, Givaudan-Delawanna; E. Manheimer, J. Manheimer; George Mann, Norda; and Bernard Polak, Polak's Frutal Works.

HOLDING THE MIRROR TO MOTHER NATURE!

Specialties FROM HAARMANN & REIMER

NEROFLOR EXTRA HAARMANN & REIMER

A hitherto unknown aromatic chemical with a marked similarity to Oil Neroli Bigarade and Orange Blossom.

Its pronounced floral note makes it a valuable addition to many other floral perfumes — Jasmin, Gardenia, Tuberose and Sweet Pea.

Underlying the floral note is a somewhat heavy Indolic note which is characteristic of so many Natural Floral Oils.

Neroflor Extra has excellent fixing properties.

Neroflor Extra will not irritate the skin or discolor, so is admirable for use in compounds for cosmetics or in soap.

NEROFLOR EXTRA HAARMANN & REIMER
NEROFLOR SAVON HAARMANN & REIMER

Write for pamphlet giving suggested formulae.

SPECIALTIES from LA BELLE FRANCE!
By J. and E. SOZIO, Grasse

ROSE HV: Compounded rose base processed by extraction in presence of flowers other than Rose de Mai.

ROSE HM: The same base and process, with Rose de Mai.

CHENIRAX: Soluble product of extraction of Mousse de Chene and Gum Styrax.

CHENAMBROL: Soluble product of extraction of Mousse de Chene and Ciste. Available also decolorized.

DISTIRIS: Reconstitution from fractions of natural oils other than Iris Butter, distilled over Iris Roots.

DISTIRONE: Reconstitution of Absolute Iris (Irone) odor in a mixture subsequently distilled over Orris Roots.

You are invited to send for samples of any specialties that interest you.

VERONA

VERONA AROMATICS

A DIVISION OF VERONA-PHARMA CHEMICAL CORP.

Plant and Main Office:

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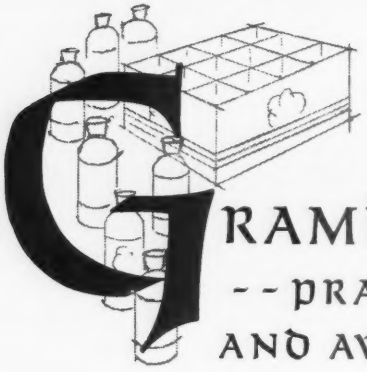
1210 ROSEDALE AVENUE, CHICAGO, ILL.



GRAMICIDIN -- PRACTICAL AND AVAILABLE

Promptly available in any needed quantity from its *original* producer – Wallerstein – gramicidin today offers eminent practical advantages to the drug or cosmetic manufacturer seeking added anti-infective or deodorant appeal in his products.

An effective bacteriostatic agent against many gram-positive pathogens and odor-formers, gramicidin offers the practical advantage of *immediate* usefulness. No New Drug Application is required, no batch certification is involved.

Stability, too, adds to the practicality of gramicidin. No expiration dating is required. Unlike many polypeptides, gramicidin is stable in dry form, in the presence of water, and even at sterilizing temperatures.

And because of its established safety for topical application, gramicidin may be freely used in over-the-counter preparations.

GRAMICIDIN Ⓦ — practical and *available*

Gramicidin is immediately and constantly available from Wallerstein. As the world's prime producer of gramicidin, tyrothricin and tyrocidine hydrochloride, Wallerstein is both a reliable source of supply and an experienced source of useful technical service.

Would you like to improve *your* product with gramicidin? Get in touch with Gerry Gray at Wallerstein. He is there to give you information and service on gramicidin, tyrothricin, tyrocidine hydrochloride, and other Wallerstein products including enzymes for pharmaceutical use.

WALLERSTEIN COMPANY, INC.

PHARMACEUTICAL DIVISION

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Kohnstamm Honors 40-Year Veterans

H. Kohnstamm and Company recently presented three veterans of the firm with special awards for 40 years of individual service with the company. The ceremony was the highlight of the program dedicating the opening of the new Kohnstamm plant in Kearney, New Jersey. The three veterans are Paul Tamalis, Walter Brown and William Klenk.

Sterling Drug Buys Poultry Vaccine Firm

Sterling Drug, Inc., has acquired the assets, goodwill and business of Delaware Poultry Laboratories, Inc., Millsboro, Delaware, manufacturers of poultry vaccines and other medicaments. The company will operate as a separate subsidiary, with Dr. Hiram Lasher, founder of the business, continuing as director of laboratories, and William Mitchell continuing as vice-president of sales. Distribution of Delaware's products is to be extended to the entire country with the help of the Sterwin Chemicals sales organization, and research is to be expanded through the Sterling-Winthrop Research Institute, both Sterling subsidiaries.

Felton Fetes Four

Felton Chemical Company, Inc., recently welcomed four more employees into their growing 25-Year Club: Ed Barbeau, Stanley Maas, George Grubel and Bill Zuckerman.

Averil Expands

Averil, Inc., moved last October to an enlarged plant at 6780 N.W. 37th Court in the Hialeah area of Metropolitan Miami. Since then, the contract packaging firm has added 15 new products to the 150 widely diversified private label toiletry and chemical specialty products then being packaged. Robert Hillstead, president, has indicated that the new facilities are already in need of further expansion, and that this is to be accomplished in the year 1959.

New P.R. Agency

Fuller, Miele, Inc., a new public relations agency at 247 Park Avenue, New York 17, has been established, serving clients in the pharmaceutical, photographic, chemical and related industries. Prescott C. Fuller and Philip H. Miele formed the agency.

John H. Breck, Sr. (center), chairman board, John H. Breck, Inc., holds memento presented by Union Carbide vice-president, J. A. Field. Left to right: J. R. Retter, Carbide district sales manager; E. J. Breck, president, Breck; Mr. Field; R. A. Duncan, Union Carbide sales manager,

Union Carbide Honors Breck

A gold-plated, miniature railroad tank-car was recently presented to John H. Breck, Sr., chairman of the board of John H. Breck, Inc., by Union Carbide Chemicals Company. J. A. Field, vice-president of Union Carbide, who made the presentation, said that the tank-car represented the completion of 25 years of service by his firm to Breck. The occasion also commemorated the 50th anniversary of Mr. Breck's entrance into the hair care preparations field, he said, and noted that from five-gallon orders in 1933, Breck's orders from Union Carbide had reached 8,000-gallon tank-cars.

A. H. Robins to Build Research and Office Facilities

The A. H. Robins Company, Inc., has purchased a 12½-acre tract in Richmond, Virginia, for future construction of combined research and office facilities.

Max Factor & Company Is 50

Max Factor & Company is celebrating its golden anniversary this year. The business was founded in 1909, following a year during which Max Factor, Sr., ran a theatrical makeup and hair goods shop in Los Angeles. With branches now in England, Manila, Canada, Cuba, Mexico City, Australia, South Africa, Argentina, France and Ireland, the firm is a world-wide organization.

Stayner Moves

Stayner Corporation has consolidated all its operations in a new and larger laboratory and office building at 2531 Ninth Street, Berkeley 10, California. The telephone remains the same.

Pfizer Honors 26 Employees

Twenty-six employees who completed 25 years of service with Chas. Pfizer & Company in 1958 were honored recently at a dinner given by the company's board of directors at the Hotel Granada, Brooklyn. Each of the employees received an engraved gold watch and service pin, presented by John E. McKeen, president.

Roy R. Conner

Roy R. Conner, veterinary marketing manager of Schering Corporation, died December 21 at his home in Glen Rock, New Jersey. Mr. Conner had managed Schering's veterinary marketing department since its formation in 1954.

Ralph C. Najarian

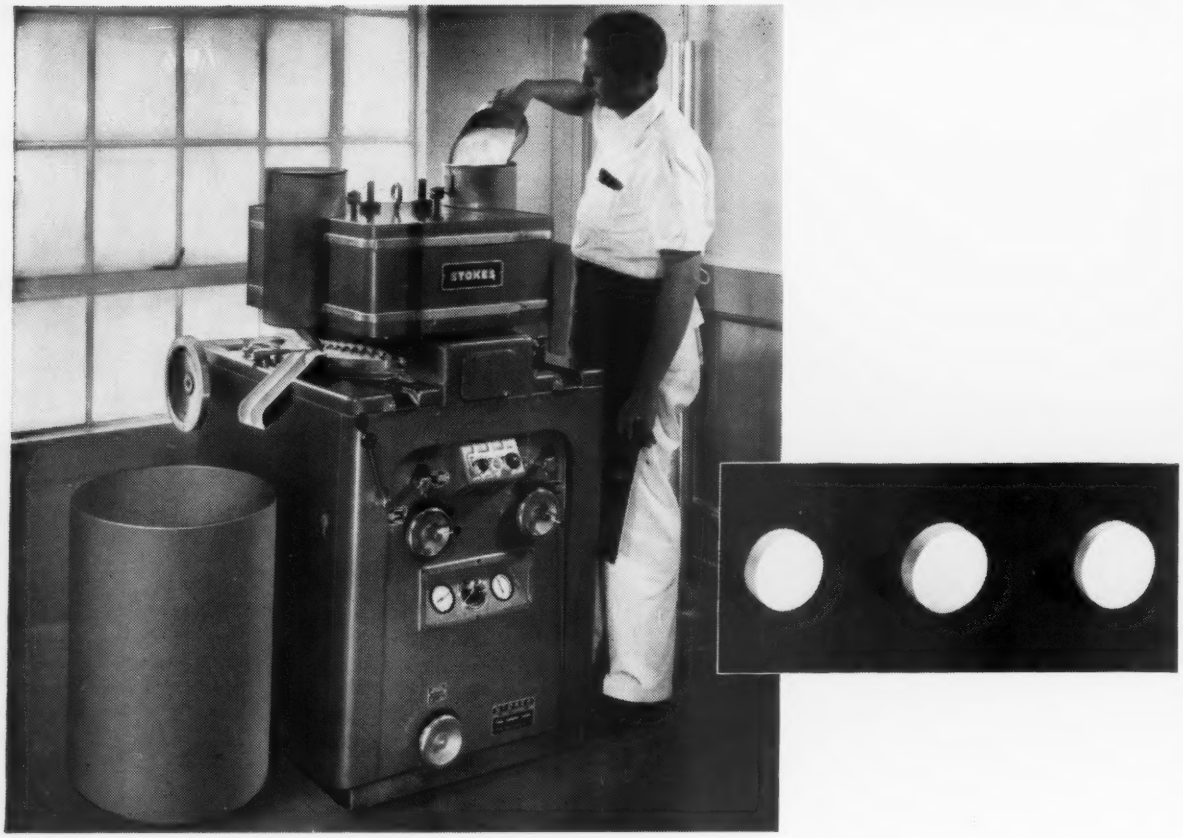
Ralph C. Najarian, advertising plans advisor for Schering Corporation, died suddenly on December 23 at his home in Montclair. Mr. Najarian had been with the company since 1941.

William Reed Veazey

Dr. William Reed Veazey, retired director of The Dow Chemical Company, died December 20 at Youngstown, Ohio. Long identified with Dow's research and administrative activities, Dr. Veazey had retired in 1953 after 37 years of service, 26 of them as a director.

James Grant Park

James Grant Park, retired vice-president and director of the Enjay Company, Inc., died January 29 at his home in Yonkers, New York. Mr. Park was a member of many chemists' organizations, and served as organizing president of the Chemical Market Research Association.



Stokes 551 Rotary more than doubles production rate for Norwich Pharmacal . . .

The Norwich Pharmacal Company, Norwich, New York, purchased their first Stokes Model 551 Rotary Tabletting Machine after making detailed comparative tests. Their selection was based on the superior production capacity of 4000 tpm . . . more than double the rate of their previous machines. In addition, the 551 also delivers greater product uniformity in the pressing of Norwich Aspirin and Norwich AAC tablets.

Since installation, the Stokes equipment has produced excellent results with only minimum routine maintenance. With Stokes' highly efficient design, and conveniently located centralized controls, perfect quality control is assured.

Stokes' Engineering Advisory Service will assist you in planning new or modernized tabletting operations, advise in matters of formulation and production. Complete specifications of the Model 551, or any of the pharmaceutical manufacturing equipment made by Stokes, may be had on request. Call or write—today.

Pharmaceutical Equipment Division
F. J. STOKES CORPORATION
5500 Tabor Road, Philadelphia 20, Pa.

STOKES

Management Forum

BY FRANCIS CHILSON
INDUSTRIAL CONSULTANT

Revolutionary Tablet Granulation and Coating System

When I first heard of the revolutionary tablet granulation and coating system invented by Dale Wurster and assigned to the Wisconsin Alumni Research Foundation, I frankly didn't believe it *could* work. Later, when I saw samples of granulation and coated tablets of various kinds, I became interested to an extent which caused me to travel a thousand miles entirely at my own expense to spend a couple of days making a thorough investigation of this new process. Those of you who know me well will realize that either I was enormously impressed or that I am losing my mind, when I was induced to take a couple of days out of a busy schedule and investigate this system at my own expense.

This system is patented both as to equipment and as to process, and it is the purpose of the Wisconsin Alumni Research Foundation to make it available to the industry on a minimum royalty basis. Before describing the equipment or the process, I would like to summarize what can be done with this process and this equipment.

(1) This system saves labor, overhead expense, space and material. It will save many times the operating and royalty costs on any production volume that justifies a conventional set-up.

(2) It will make uniform granulations that will run in a tablet press like water.

(3) It can be used to produce a finished coated tablet from the original granulation without at any time removing the product from the system.

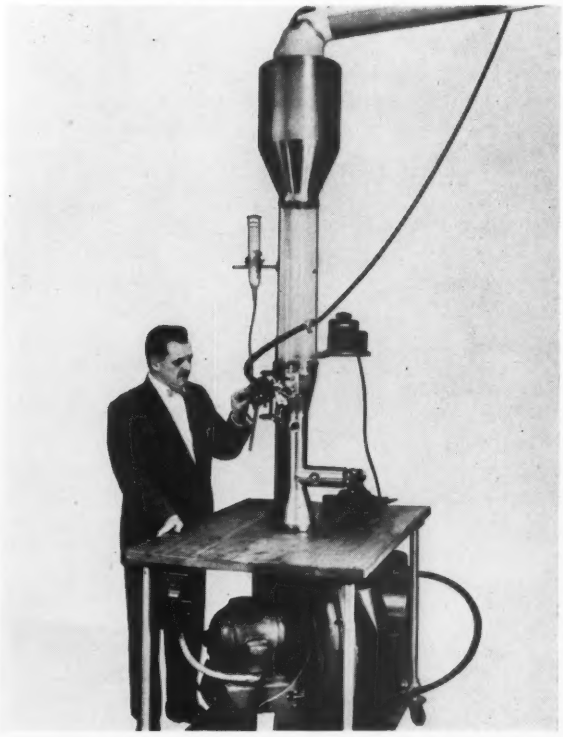
(4) It can be used to protect sensitive material, such as vitamins A and C, within a soluble film, so that in formulating multi-vitamin mixtures, for example, it will not be necessary to add excessive overages—or perhaps none at all.

(5) It can be used to put a film on any kind, shape or size of uncoated tablet, even those that are debossed or embossed, and the letters are not obscured by the film.

(6) It can be used to put a sugar coat on regular tablet centers of any required thickness, and the coating can be colored in minutes in whatever color is desired—and the coloring is uniform.

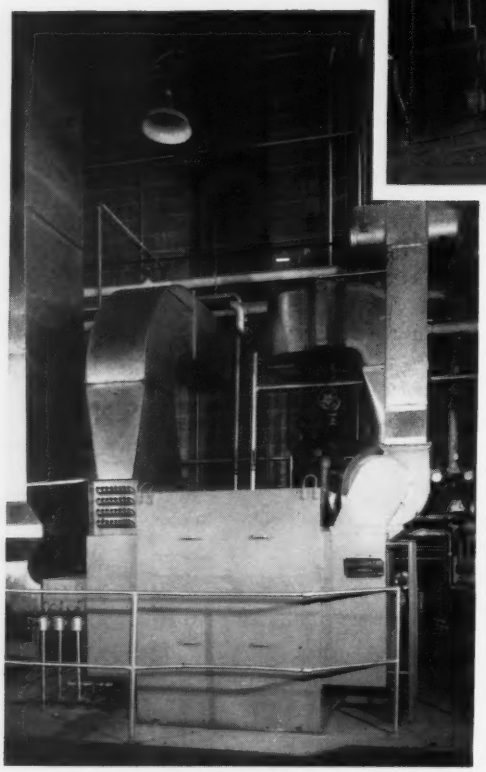
(7) This system is a closed system and is entirely dustless in operation, whether used for making granulation or for coating or filming tablets.

Dale Wurster with a laboratory model of his "air float" granulating and coating machine. The system is patented as to both equipment and process and will be made available by the Wisconsin Alumni Research Foundation on a minimum royalty basis. It mixes, coats and dries.



NO HEADACHES
from unwanted moisture

This Lectrodryer makes this 15,680 cubic foot room independent of outside weather conditions.



Whitehall, makers of ANACIN, dehumidify with **Lectrodryer***

Tableting at Whitehall Pharmacal Company, Elkhart, Indiana, is done in a DRY atmosphere. A Type CHO Lectrodryer holds this room at 20% relative humidity at 70°.

No moisture to contaminate fine products or slow their flow.

Your moisture problems may be solved equally easily with Lectrodryers. The book ***Because Moisture Isn't Pink*** tells how others are safeguarding products and production by eliminating unwanted moisture. For a copy, write Pittsburgh Lectrodryer Divison, McGraw-Edison Company, 309 32nd Street, Pittsburgh 30, Pa.

Lectrodryer

*REGISTERED TRADEMARK U. S. PAT. OFF.

(8) The "art" of the coater is eliminated and the system can be operated by any intelligent semi-skilled worker.

(9) There is no loss of material while the system is in operation.

(10) The speed of the system is phenomenal. I saw a batch of tablets colored and dried in 20 minutes, which by normal pan methods would have taken 24 hours.

This system combines in one simple piece of apparatus the functions of mixing, coating and drying.

The equipment is very simple. It consists of a vertical tube which is flared out at the top into a bell resembling the smoke stack of an old-fashioned wood-burning locomotive, such as you see often in TV "westerns."

The bell is enclosed and its discharge vent may be connected with a conventional dust collector. In commercial operation this vent can be controlled by a humidistat and the air recirculated through the air-supply fan in such a way that a certain percentage of the moisture-laden air can be spilled at each cycle.

Below the vertical tube there is a fan with suitable means for heating air. Above the fan in the original model is mounted a perforated plate designed to provide uniform turbulence and to sparge the sides of the verticle tube so that none of the material will stick to it. (This has since been eliminated as superfluous.) Above the air inlet feed and discharge chutes are arranged at a tangent to the processing tube. At the side of the processing tube are mounted a series of spray injectors or atomizers for feeding at a controlled rate of flow solutions of gum, resins, waxes or sugar as required. Grossing or build-up coats of chalk, starch, sugar or powdered medicaments or mixtures of these are fed into the system in the form of a slurry, and atomized onto the tablet centers. Where necessary or desirable, these materials can be fed by means of a powder injector.

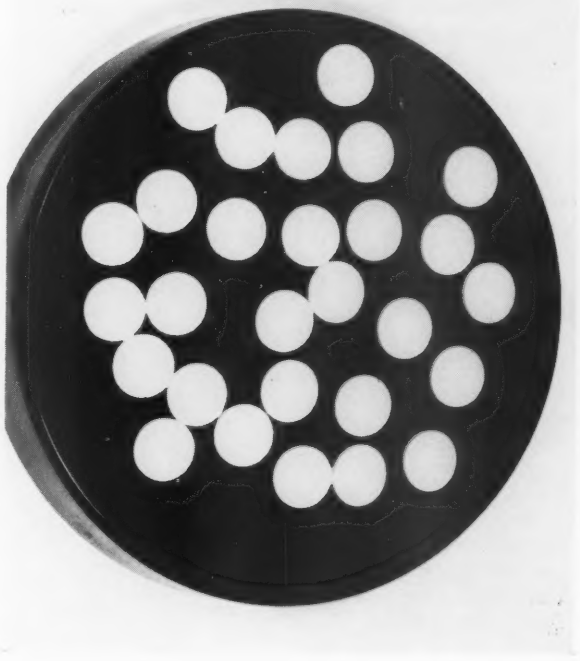
As atomization takes place, drying is virtually instantaneous.

When the equipment is used for granulation, all you have to do is to mix the dry ingredients in a suitable blender. The mixed medicament powder and excipients are fed into the atomizing chamber where they come into contact with the granulating solution from the atomizers, containing, when required, liquid medicaments. Air pressure and turbulence is controlled so that the material never can come in contact with the lower portion of the processing chamber. In effect, it "boils" in the impregnating chamber on an air cushion. When the material is sufficiently dry, the air supply is cut off and the material may be discharged into a suitable receptacle. Granulations as fine as 80 mesh have been produced that still will run like water. As a matter of fact, the flow characteristics of materials that have a very high arching factor, or are naturally adherent or abrasive, can be changed altogether.

Thus, with this system you can produce a uniform granule which is free-flowing because of its spherical shape. Apart from the dust involved in loading the

Granulation made by the Wurster process machine. This system will make uniform granulations that will run in a tablet press like water, and it can be used to produce a finished coated tablet from the original granulation without removing the product from the system at any time.

Sugar-coated tablets finish-coated in the Wurster process machine. It can be used to put a sugar coat on regular tablets of any required thickness, and the coating can be colored in minutes in whatever desired color, with uniform coloring. It is closed and entirely dustless.

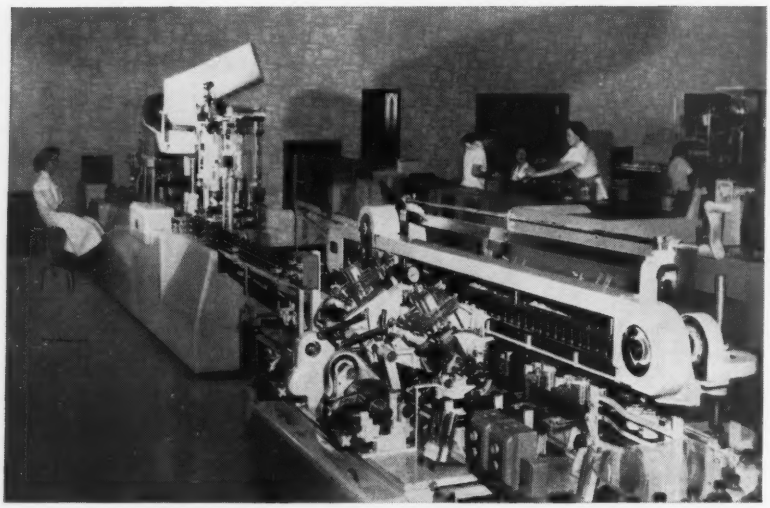


Famous pharmaceutical maintains commanding position

Advertisement

LISTERINE'S SUCCESS LIES IN CONSTANT UP-DATING OF PROMOTION AND PRODUCTION

• Pneumatic packaging equipment one example



High speed Pneumatic bottling line in operation at Lambert-Hudnut plant.

The promotional imagination and genius displayed in the fabulous success story of Listerine's ascent to a position of dominant leadership as a personal antiseptic has become one of the great legends of American business.

Listerine's marketing ingenuity and skill have been obvious. Less obvious, perhaps, has been the part that production methods and plant efficiency have played in making possible the maintenance of satisfactory cost and profit margins.

Part of Listerine's master plan has been constant modernization and unrelenting elimination of obsolescence. The new Lambert-Hudnut plant in Lititz, Pennsylvania, where Listerine is now produced, is an example. Here, where the most up-to-the-minute facilities prevail, Listerine operates a number of Pneumatic machines including a bottling line for the automatic cleaning, filling, capping and labeling of the three sizes of Listerine containers — three ounce, seven ounce and fourteen ounce.

This Pneumatic hook-up handles the tremendous Listerine daily production with impressive ease, and with a "lower cost per container" efficiency that has made Pneumatic equipment first choice of the leading producers in pharmaceuticals, foods, liquors, soaps, cosmetics and chemicals, to mention a few.

Early Listerine Advertisement

When you have packaging or bottling equipment on your mind, Pneumatic is the name to remember.

PNEUMATIC SCALE CORP., LTD., 70 Newport Ave., Quincy 71, Mass. *Also: New York; Chicago; Dallas; Rochester; Seattle; San Francisco; Los Angeles; Rockwell Pneumatic Scale Ltd., London N.W.2, England; Paris, France. Subsidiaries: Delamere & Williams Co., Ltd., Toronto; Carbert Mfg. Co., Inc., Cambridge, Mass.*

PNEUMATIC

preliminary blender which, incidentally, is not part of the apparatus, this system is entirely enclosed and dustless in operation. Because of the violence of the agitation and the air film flowing over the surface of the verticle mixing or impregnating chamber, there is no waste of material because it does not have an opportunity to adhere to the sides of the mixing vessel. In effect, the whole mass rides upon an air cushion and is enclosed within a moving air film. It is perfectly obvious that this system lends itself ideally to the preparation of delayed medication granules. Such granules can be prepared in separate lots and subsequently mixed or they can be coated seriatim with a variety of medicaments.

When the granulation has been formed, it may be finally coated, if necessary, by metallic stearates, talc or other lubricating materials. Hence, when the product is discharged from the apparatus, it is ready for compression.

All the work of wet granulating, spreading on trays and drying is completely eliminated. Thus, the system accomplishes in *minutes* what normally requires from one to three days or more.

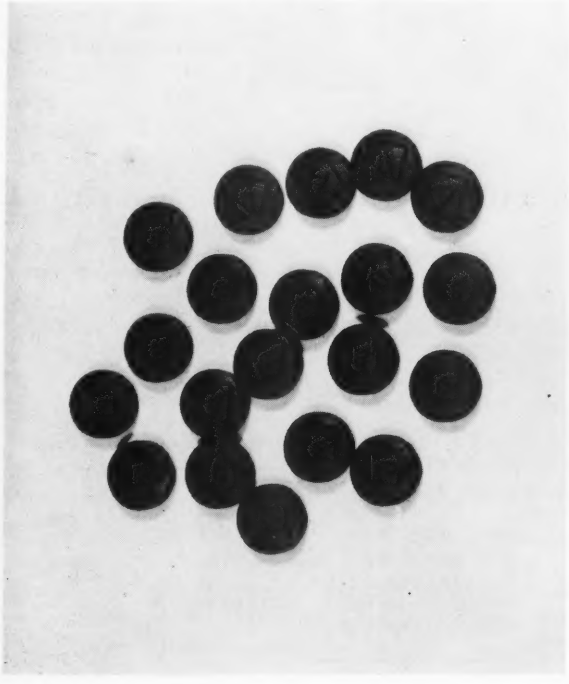
The same apparatus can be used for two types of coating—film coating or built-up sugar coating. When it is used for film coating, the coating material may be dispersed in an aqueous or volatile solvent. The tablet centers are fed into the processing chamber and they ride suspended on a cushion of air while the coating materials are being sprayed on. The deposited coating drys instantly and, when the tablets are examined, it will be found that the coating is uniform in thickness and contains no pin holes.

Indeed, the coating is so uniform that, as mentioned above, debossed or embossed tablets may be film-coated without in any way blurring the lettering or decoration as the case may be. This thin coating is so uniform, as a matter of fact, that all imperfections in the tablets themselves will show through the coating such, for example, as fins or indentations. These imperfections, however, can be controlled by careful maintenance of punches and dies in the press room, as they should be.

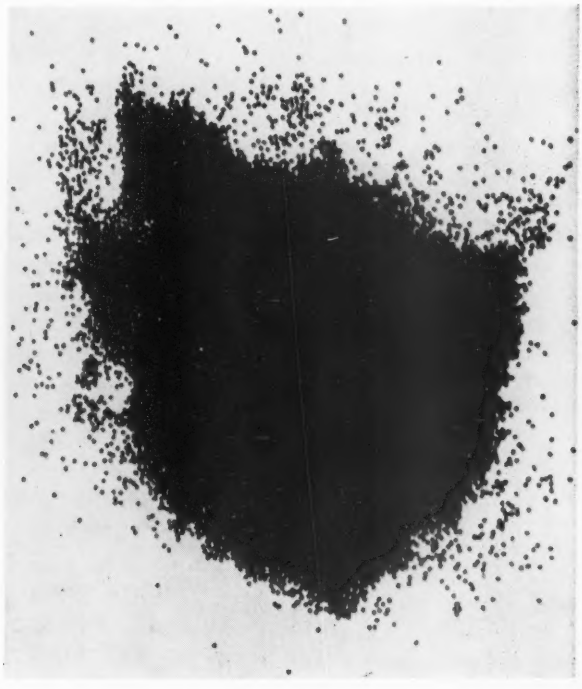
Sugar coating or alternate layers of sugar coating and medicament may be applied in like manner. The original shape of the tablet center is preserved. In the experimental equipment some chipping of corners of larger tablets has been observed, but in the writer's opinion this is controllable through the addition of plasticizers to the coating materials. It is obvious from this description that multi-vitamin and other tablets can be qs'd when assays of tablet centers indicate shortages. Equally obvious is the fact that the process is excellent for enteric coatings or delayed medication coatings.

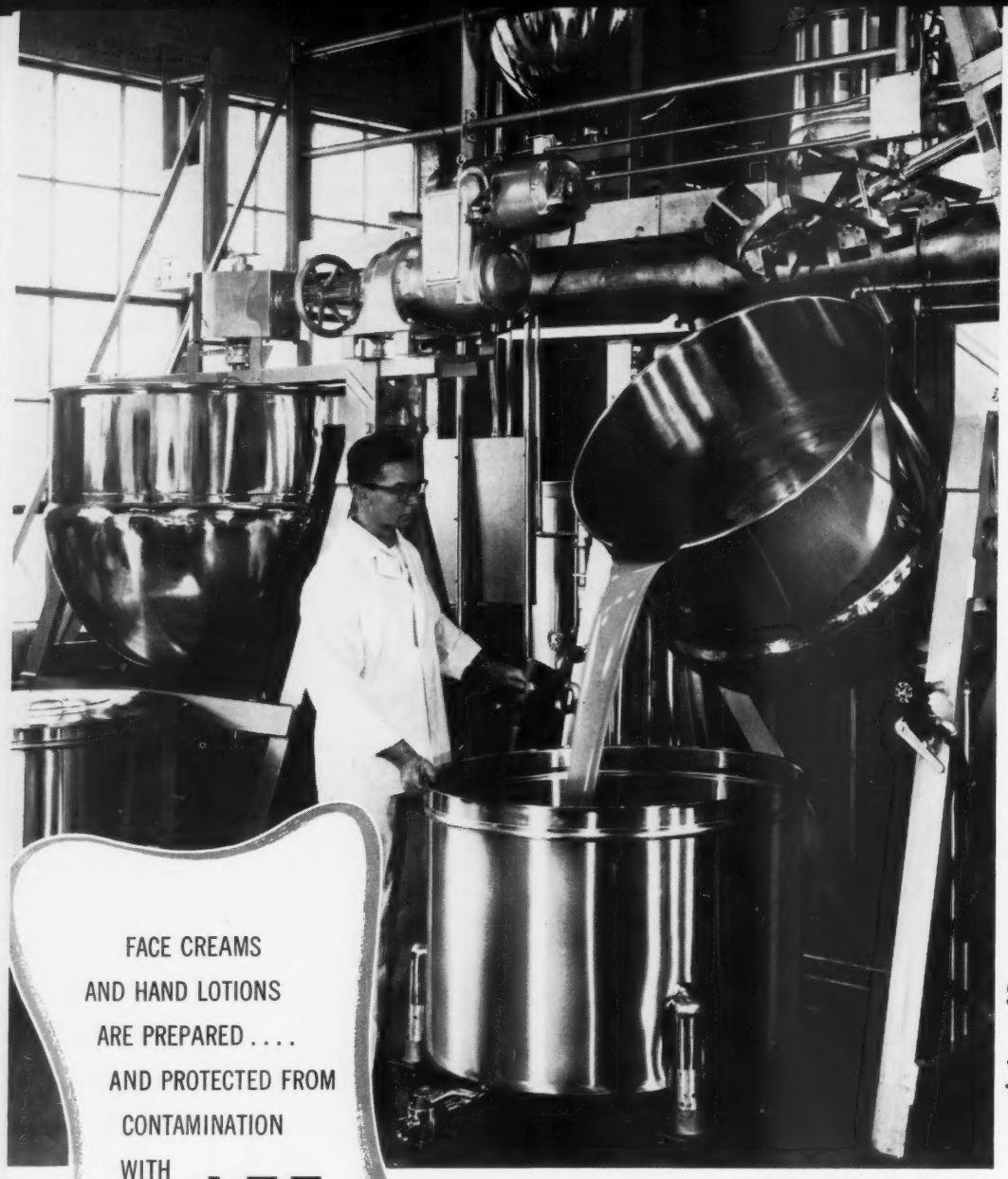
With the system above it is possible to make complete coated tablets or pulvers by starting with rape seed or granulated sugar and building up by successive applications of medicaments until the required size is obtained and then finishing off with the required coating materials and colors. Colors are applied to finished coated products by uniformly regu-

Film-coated tablets made by the Wurster process, which can put a film on any kind, shape or size of uncoated tablet, even on those that are debossed or embossed, without obscuring the letters by the film. The system saves labor, overhead expense, and space and material as well.



Thirty-five to 40 mesh pellets coated by the Wurster process, which eliminates the "art" of the coater, since it can be operated by any intelligent semi-skilled worker. There is no loss of material while the system is in operation, and it cuts normal coating time to a fraction.





FACE CREAMS
AND HAND LOTIONS
ARE PREPARED . . . .
AND PROTECTED FROM
CONTAMINATION
WITH

LEE STAINLESS STEEL KETTLES

Courtesy of Charles of the Ritz

Assuring high quality control in the production of delicate creams and lotions, these Lee steam-jacketed stainless steel kettles are corrosion-resistant and easy to clean and keep clean.

Complete product mixing is obtained through the use of Lee double-motion center line scraper agitators, whose large stainless steel scraper blades continually move the contents from the heated walls toward the center, keeping an even temperature throughout.

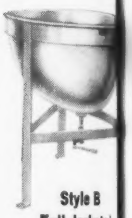
Lee hydraulic operated cylinders—using your present water lines—give perfect control and safety not only in tilting the kettles for pouring and cleaning, but also in raising and lowering the tilting agitators.

Descriptive bulletins for all of our specially-designed processing equipment available on request.

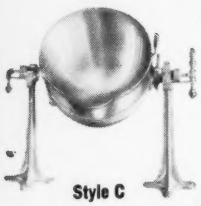
CW3T
Center-line Scraper Agitator Kettle
80 to 300 gal.

Quick Cooling Pan
50 to 200 gal.

Style A
Two-thirds Jacketed
5 to 500 gal.



Style B
Full Jacketed
10 to 300 gal.

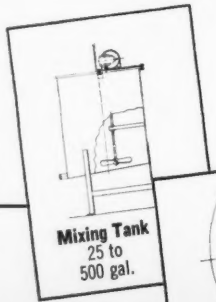


Style C
Two-thirds Jacketed
5 to 100 gal.

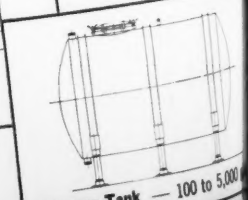
Pressure Kettle
Two-thirds Jacketed
40 to 200 gal.

Style CW
Two-thirds Jacketed
80 to 300 gal.

Pulp Tank
500 to 2,000 gal.



Mixing Tank
25 to
500 gal.



Storage Tank — 100 to 5,000

LEE

Technical bulletins fully describing these processing units gladly sent on request.

METAL PRODUCTS CO., INC.

408 PINE STREET, PHILIPSBURG, PA.

Designers and Manufacturers of Corrosion-Resistant Processing Equipment for over 25 years.

lating the flow and pressure of the coloring material through an atomizing nozzle.

Thus, it is seen that this process and this equipment takes the "art" out of coating. The procedure can be carried out by intelligent semi-skilled workers. If you are satisfied with a spherical shape, this system will enable you to build up and coat a tablet in a *minute* fraction of the time normally required. Finally, the apparatus has been designed so that it can be thoroughly washed out in a matter of minutes and, with equal rapidity, dried with hot air.

This is the first unique process that has been introduced for the preparation of tablet granulations and for coating operations. It is the first truly revolutionary process since the introduction of continuous injection molding of soft elastic capsules. Like all revolutionary processes, methods or equipment, it sounds too good to be true. On the surface it seems suspiciously too simple. That is why I journeyed to Madison, Wisconsin to investigate the process and the apparatus. That there will be "bugs" in scaling up the apparatus to much larger volumes or in feeding a multiple series of small apparatuses, there can be no doubt. But I was able to find none that appeared difficult to solve. For example, sugar-coated tablets made in the experimental apparatus that I observed were not finished with sufficient smoothness because only sugar was used in the finishing coat. Obviously the final finish on tablets depends on the formulation of the final coating. But "bugs" like these are trifling and easily worked out through proper formulation.

ADMA Fiasco

Some years ago the trade, under the auspices of the ADMA, financed the development of an electronic ampoule inspection machine to the tune of $80,000. At the time the project was announced I stated in this column that the idea was basically unsound and that such a machine could never be made to work, and I also stated the reasons why I felt that way. But the interesting thing about the development was that neither I nor anyone else having a variety of experience in dealing with ampoules of different kinds in different plants and under different conditions, was ever asked for an opinion before the money was wasted. The experience of the people who cooperated with RCA in the development was limited to their own products and their own plants.

Film Coating

There is a possibility that film coating will eliminate a major part of sugar coating. A film-coated tablet is easy to swallow. It prevents tasting the tablet. The film coating is quicker and cheaper to apply than sugar coating. Unlike sugar-coated tablets, film-coated tablets will show all embossing or debossing of words, initials, symbols and trade marks that may be impressed upon the tablets. It eliminates the need for a special coloring operation because the color of the tablet with a colorless film may be sufficient, or the film itself may be colored.

New Liquid Filling Unit

A new high-speed precision liquid filling unit featuring a new combination plunge-fill and container-centering nozzle design that assure clean, mess-free filling of glass, plastic or metal containers is now available from Arthur Colton Company, 3400 E. Lafayette, Detroit 7, Mich.

The unit's multiple liquid filler has a patented Exacto-metric metering cylinder, and valve assemblies that maintain filling accuracy to within one per cent on each fill. The metering cylinder has a "suck-back" control plus positive centering of the container for the operation. Speeds up to 480 fills per minute are possible.

Liquid Filling Unit Eliminates Excessive Foaming

The Bottom-Up fill device now available from the Karl Kiefer Machine Company, 932 Martin St., Cincinnati 2, Ohio, is designed to eliminate excessive foaming, reduce aeration, permit increase or decrease of level selection while in operation, and to provide faster filling speed. The container is filled from the bottom by means of an elongated section through which the product flows via orifices just above the tip of the stem, which are immersed in the liquid throughout; when completed, the stem is retracted within a tube subjected to vacuum, preventing dripping.

Automatic Attachment For Portable Filler

A new Single-Cycle Attachment adapts any Filamatic Portable Filler for automatic filling. This attachment, available from National Instrument Company, Inc., Baltimore 15, Md., may be attached to any standard conveyor to provide a low-cost automatic filler. The Filamatic fillers are available with single, dual or multiple nozzles, and the attachment recycles the filler, its switch being depressed by the moving container on the belt. An indexing mechanism is also available which holds the containers under the filling nozzle, and has a safety device against spilling. Filling rates up to 100 per minute are possible. Containers up to eight ounces can be filled.

Aerosol Valve Inserter

PMC Industries, Inc., 293 Hudson St., Hackensack, N. J., has introduced the RI-1200 Aerosol Valve Inserter, a continuous rotary motion, 12-station unit for automatically inserting aerosol valve assemblies into cans at speeds up to 150 a minute. A guide mechanism assures positive control of the dip tube and insertion of close-fitting assemblies. An attachment orients the dip tube with can's printing.

Trade Literature

News of Grasse

Charabot & Company, Inc., has published the second issue of Nouvelles de Grasse. The 24-page bulletin gives general news of Grasse, information on lavender oils, an experimental section, a discussion of the floral production of the first half of 1958 and a market review.

Ungerer's New Products List

Ungerer & Company, Inc., 161 Ave. of the Americas, New York City 13, has issued a new reference list covering products sold by the company. Its new cover design shows the Ungerer seal, which will also appear on container closures, to insure against tampering in shipping. Besides essential oils and aromatic chemicals, the list features Ungerer-Vidal Charvet, France, perfume specialties, and a wide range of flavors with usage tables, to help customers determine products best suited to their needs.

Tablets and Capsules

Nysco Laboratories, Inc., 34-24 Vernon Blvd., Long Island City 6, N. Y., has published a new catalogue of tablets and capsules. A 63-page booklet, it covers antibiotics, capsules, capsule imprinting and sealing, gum products, narcotic preparations, nasal insufflator, time-disintegration capsules, powders, tablets and vitamin specialties.

Organic Chemicals

Emery Industries, Inc., Dept. 5, Carew Tower, Cincinnati 2, Ohio, has made available a new edition of its catalog listing product designations, descriptions and specifications for the firm's line of organic chemicals. Entitled, Specifications and Characteristics of Organic Chemicals, it includes for the first time the Metholene fatty acid esters, as well as other individual products added during the past year. The catalog also includes other organic chemicals.

Union Carbide Products

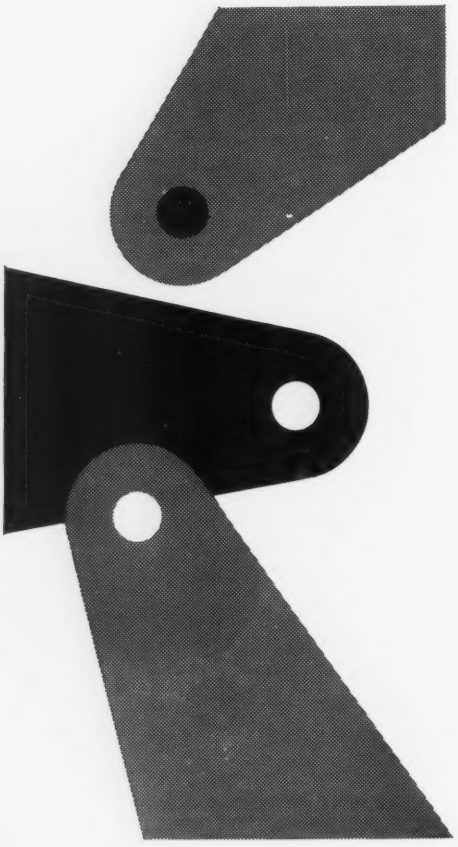
Union Carbide Corporation, 30 East 42nd St., New York City 17, has issued its 1959 listing of the company's products: alloys and metals, carbon products, chemical products, industrial gases and equipment, plastics, nuclear products and consumer products. The 16-page book also provides the locations of sales offices of divisions and subsidiaries and trade marks.

Research Institute Brochure

The Warner-Lambert Research Institute, Morris Plains, N. J., has made available a brochure setting forth the organizational structure of the firm's new Research Institute which guides research and product development for all divisions of the pharmaceutical company.

Electron Microscope Information

A new 12-page Norelco booklet, Questions and Answers on Electron Microscopes, is available from the Instruments Division, Philips Electronics, Inc., 750 S. Fulton Ave., Mount Vernon, N. Y. It treats technical problems in the field.



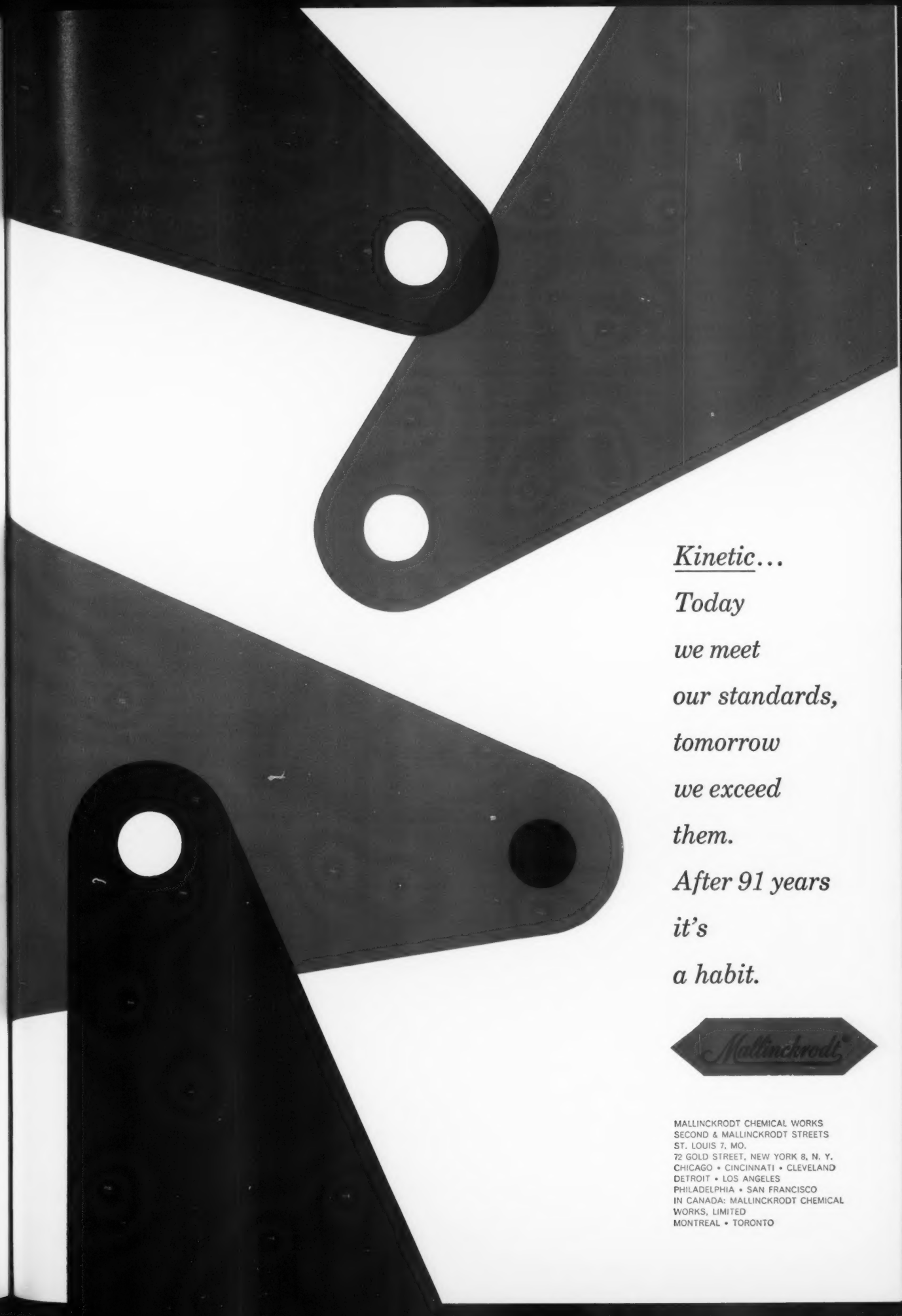
An example of kinetic research

TOLERON® brand of ferrous fumarate

excels other iron compounds because...

- it yields more elemental iron
- it is absorbed quickly and efficiently
- it is better tolerated
- it has no typical "iron" taste, even in the uncoated tablet
- it has a higher margin of safety
- it produces excellent hemoglobin response
- it combines easily and perfectly with the usual fillers, lubricants and disintegrators to make perfect tablets or capsules

Mallinckrodt®



Kinetic...

Today
we meet
our standards,
tomorrow
we exceed
them.
After 91 years
it's
a habit.

Mallinckrodt®

MALLINCKRODT CHEMICAL WORKS
SECOND & MALLINCKRODT STREETS
ST. LOUIS 7, MO.
72 GOLD STREET, NEW YORK 8, N. Y.
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PHILADELPHIA • SAN FRANCISCO
IN CANADA: MALLINCKRODT CHEMICAL
WORKS, LIMITED
MONTREAL • TORONTO

Laboratory Data Sheet

VITAMIN C

ROCHE

l-ASCORBIC ACID, U.S.P.
COATED *l*-ASCORBIC ACID—97.5%
SODIUM *l*-ASCORBATE

- The first to achieve commercial production of vitamin C by the famous Reichstein synthesis.
- Roche produces every useful type of *l*-ascorbic acid to meet virtually every manufacturing need.
- Single uniform lots as high as 3000 kilos, saving you assay costs.
- All types are uniform, readily soluble and easy to handle.
- Roche guarantees highest quality, held to rigid specifications.
- Quick delivery from strategically located warehouses.
- Packaged to protect original quality in sealed tamperpruf containers.

l-ASCORBIC ACID, U.S.P. 'Roche'

TYPES	DESCRIPTION AND USES
GRANULAR TYPE 20-60	100% (±) passes through 20 mesh. 95% is retained on 60 mesh. Similar to granulated sugar in particle size. Satisfactory for direct addition to dried granulations.
FINE GRANULAR TYPE 40-80	100% (±) passes through 40 mesh. 95% is retained on 80 mesh. A free-flowing product similar to table salt in particle size. Recommended for tablet granulations where fine powder is considered less suitable because of denser packing.
SUPERFINE GRANULAR TYPE 60-100	100% (±) passes through 60 mesh. Approximately 25% remains on 100 mesh. 45-50% passes through 100 mesh and remains on 200 mesh. 25-35% passes through 200 mesh. A very fine free-flowing crystal suitable for dry gelatin capsules or tableting. Useful in dry mixtures, food supplements.
FINE POWDER TYPE 100	100% (±) passes through 100 mesh. Produced by grinding crystalline material. Non-abrasive on tableting dies. Widely used for granulations, solutions, food supplements. Minimizes fractionation of particles in dry mixtures.
ULTRA FINE (MICRO) POWDER TYPE 325	Minimum 99% through 100 mesh. Minimum 90% through 200 mesh. Milled extremely fine. Practically devoid of abrasive action on cutting dies. Screen tests above 200 mesh are unreliable because of variations in technique, equipment, humidity, static charges, etc. Sedimentation tests and measurement of particle size in microns reveal that 60-70% of Roche material is smaller than 44 microns (equivalent to 325 mesh).
AMPUL TYPE	Very fine crystals—easily dissolved. Minimum color. Specially produced and tested for use in parenteral solutions. See Roche technical brochure "Notes on Vitamin B, and Vitamin C Parenteral Solutions" for complete details.
TYPE F	Especially produced for use in the food industry. Free-flowing, will not dust or clump, dissolves easily. U.S.P. in quality. 100% through 50 mesh. 98-99% remains on 200 mesh.

COATED *l*-ASCORBIC ACID—97.5% 'Roche'

DESCRIPTION

Coated ascorbic acid 97.5% 'Roche' is a fine, white, or nearly white powder. It is pure U.S.P. ascorbic acid powder coated with ethyl cellulose. The manufacture of coated ascorbic acid is licensed under Patent No. 2,410,417 to Roche and customers of Roche.

SPECIFICATIONS

Particle Size	100% through 16 mesh screen 75-92% through 40 mesh screen 45-80% through 60 mesh screen 35-60% through 100 mesh screen
Assay	Minimum 97.5% *l*-ascorbic acid
Identity test	Positive for *l*-ascorbic acid
Loss on drying	Negligible

USES AND DATA

Ethyl cellulose coated ascorbic acid 'Roche' has these advantages in pharmaceutical tablet manufacture:

- Small size, high potency (250-500 milligrams) tablets of light color can be made from dry granulations with very little excipient.
- Aids in eliminating chipping and capping during compression.
- Retards discoloration, mottling during abnormal storage conditions.
- Reduces contact of ascorbic acid with reactive materials.
- Rapidly available in aqueous solution for assay.
- Provides a tablet with slower release of ascorbic acid, tending to reduce localized acidity sometimes experienced with high potency tablets.

FOOD MANUFACTURERS

- Manufacturers of cured meats can use this type to advantage for retarding smokehouse activity, and for better protection in spice mixtures. It may also provide longer protection of color and flavor during storage and display.

DATA ON PARTICLE FINENESS

Based on U.S.P. XV pages 934-5; N.F. 10, pages 702-3; *Lange's Handbook of Chemistry 9th Edition, page 911

The fineness of "powders" is described in both the U.S. Pharmacopeia and National Formulary in terms which are related to the number assigned to a standard sieve made of woven wire cloth. The size of wire, and sieve opening are standardized together with permissible variation in both average and maximum openings.

Sieve Number	Sieve Opening in Microns	Sieve Opening Mm.	Permissible Variation in Average Opening Per Cent	Permissible Variation in Maximum Opening Per Cent	Wire Diameter Mm.
50	297	0.297	± 5	± 25	0.170-0.253
100	149	0.149	± 6	± 40	0.096-0.125
200	74	0.074	± 7	± 60	0.045-0.061
*325	44	0.044	± 5	± 60	0.036

Standards are established for defining the fineness of powdered chemicals, together with a technique for determining the uniformity of fineness. The types of powders described in the U.S. Pharmacopeia and National Formulary do not represent the full range of particle sizes commercially available. No procedure is given for the determination of particle size in the "ultra-fine" or "micro powder" range, sometimes referred to as No. 325. This requires a sedimentation method and measurement in microns. Ordinary sieving methods are inaccurate.

The variation possible in the standard sieves plus such variables as the motion applied to the screen and physical characteristics of the powder being screened affect accuracy and duplicability of screening tests. Particle size specifications based on mesh sizes must always be regarded as nominal rather than as strictly accurate limits of particle size and distribution.

SODIUM *l*-ASCORBATE** 'Roche'

This is the sodium salt of *l*-ascorbic acid. It is available as an odorless, tasteless, anhydrous, fine white powder or fine granular substance.

The antiscorbutic activity is in molecular proportion to *l*-ascorbic acid, one milligram of the sodium salt being equivalent to 0.889 milligram of the acid, or one milligram of the acid equivalent to 1.124 milligrams of sodium *l*-ascorbate.

Highly soluble in water—62 grams 100 ml at 25°C, 78 grams 100 ml at 75°C. Aqueous solutions are unstabile, easily oxidized on exposure to air, or other factors which affect *l*-ascorbic acid.

The pH of a sodium *l*-ascorbate solution is from 5.6 to 7. + as compared with a pure *l*-ascorbic acid solution at pH 2.3-2.5. The more neutral characteristic of the sodium salt recommends it for high dosage oral forms where gastric sensitivity to lower pH might be undesirable. It is useful in combination with ingredients which would react unfavorably under more acid conditions. Products can be buffered to a suitable pH by combining sodium *l*-ascorbate and ascorbic acid together.

Commercial forms of sodium *l*-ascorbate are not recommended for preparation of parenteral solutions. It is more satisfactory to prepare suitably buffered solutions of 'Roche' ampul type *l*-ascorbic acid, using sodium bicarbonate according to the special Roche method described in our technical brochure, "Notes on Vitamin B_1 and Vitamin C Parenteral Solutions."

Sodium *l*-ascorbate is of value as an antioxidant for use in comminuted meats and in curing pickles for hams, bacon, and corned beef. Because it is the salt of *l*-ascorbic acid (vitamin C), a substance naturally occurring in meats and identified in the U.S. Pharmacopeia, it may be preferred to antioxidants in the "chemical additive" class.

THESE PRODUCTS ARE FOR ANTIOXIDANT USE ONLY. IF USED IN FOOD PRODUCTS, NO CLAIM FOR NUTRITIONAL VALUE CAN BE MADE.

Sodium d-isoascorbate, 'Roche', antioxidant with virtually no vitamin C activity. A white, free-flowing crystalline material. Slightly less soluble than *l*-ascorbic compounds. When replacing *l*-ascorbic acid, 23% more should be used to obtain equal antioxidant activity and 8% more when replacing sodium *l*-ascorbate. These differences are due to the presence of both sodium and water of crystallization which are inactive. Literature on request.

d-Isoascorbic acid 'Roche'—antioxidant. Similar to sodium d-isoascorbate described above. Useful where acid reaction or absence of sodium is desirable. For equivalent antioxidant activity use 23% less than with sodium d-isoascorbate, or the same amount as with *l*-ascorbic acid (vitamin C).

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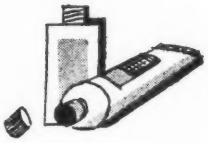

Advancing Therapy

Vitamin E Substitute

The ability of certain synthetic antioxidants, notably N,N′-diphenyl-p-phenylenediamine (DPPD), to delay or prevent appearance of vitamin E deficiency symptoms, including muscular dystrophy and sterility, has been demonstrated. This activity generally has been attributed to conservation of traces of vitamin E present in the lipid portion of diet and in tissues of experimental animals. However, experiments with rats showed that fertility could be partially restored in sterile females even when vitamin E was rigorously excluded from the regenerative diet. In the present study by H. H. Draper and A. S. Csallany (*Proc. Soc. Exptl. Biol. Med.* 99: 739, 1958) it has been found that DPPD has no conservational effect upon vitamin E present in liver and muscle of rabbits and rats maintained on tocopherol-deficient diet, and that the antioxidant brings about a rapid remission of symptoms of muscular dystrophy in rabbits fed a diet from which all lipid materials have been removed.

Curative acivity of DPPD with respect to muscular dystrophy in the rabbit is in contrast to its reported inability to prevent hypercholesterolemia and musclar degeneration in guinea pigs fed a tocopherol-low diet.

Aldosterone Antagonist

D. N. S. Kerr et al. (*The Lancet* II: 1089, 1958) give clinical results from a limited trial of a steroid spirolactone as an aldosterone antagonist to produce diuresis. The steroid spirolactones were synthesized by Cella and Kagawa (J.A.C.S. 79: 4808, 1957) and the more active compound was a 19-normethyl derivative. Animal tests showed that the compound, SC 8109, is an inhibitor of aldosterone in rats and dogs, antagonizing injected aldosterone and desoxycorticosterone. Preliminary clinical tests seemed to indicate that the drug acts as a peripheral inhibitor of aldosterone and does not affect the production of the natural hormone by the adrenals.

The current investigators administered the compound to three patients with cirrhosis and intractable ascites. Sodium and water diuresis occurred in two patients. Scarcity of the drug prevented full clinical trial but it was suggested that it will be useful in controlling ascites resistant to standard treatment.

Hypotensive Mechanism of Chlorothiazide

Observations by D. Alaksandrow, W. Wysznacka and J. Gajewski (*N.E. Journ. Med.* 260; 51, 1959) confirm the therapeutic value of chlorothiazide as a hypotensive drug. The hypotensive action usually results from the reduction of peripheral resistance, without significant impairment of the cardiac output, appears soon after the onset of sodium excretion and gradually disappears during repletion of body sodium stores after withdrawal of the drug. This coincidence suggests that the hypotensive action may in some way depend upon its natriuretic effect. Tobian et al. constantly found an increased amount of sodium in the arterial wall of animals made hypertensive by different experimental procedures. The increased sodium content—especially if present in small arterioles—is probably of importance for the pathogenesis of hypertension. Tobian suggested that it may lead to arteriolar-wall swelling and narrowing of the arteriolar lumen, with resulting increase in the peripheral resistance.

Raab and his associates suggested that the increased sodium content in the arteriolar wall might heighten the reactivity of blood vessels to circulating catechol amines. They obtained a marked decrease of the pressor response to injected nor-epinephrine in hypertensive patients during low-salt diets. Bohr, however, compared the responsiveness of epinephrine of aortic strips from normotensive and hypertensive rats and found a rather decreased reactivity in strips from the latter.

Whatever the exact way by which the increased arterial sodium content influences the blood-pressure level, it is conceivable that chlorothiazide lowers the peripheral resistance in hypertensive subjects by reducing the sodium content in their arteriolar walls.

Hydrocortisone for Colitis

The study by S. C. Truelove (*Brit. Med. J.* No. 5104: 1072, 1958) has shown that hydrocortisone hemisuccinate sodium administered in a rectal drip produces rapid clinical remissions in a considerable proportion of patients with mild to moderate attacks of ulcerative colitis. These clinical remissions are accompanied by improvement in the sigmoidoscopic appearances and by lessening of the inflammatory changes seen in colonic biopsy specimens. The beneficial effect is a pharmacological one, because a control group receiving a placebo given under identical conditions showed a negligible number of favorable responses.

It is probable that the hydrocortisone hemisuccinate sodium acts chiefly by some direct effect upon the actual mucosa of the colon. The beneficial effect commonly appears to be much more rapid than that observed with cortisone and its analogues used systemically. Some patients have been maintained on nightly rectal drips of hydrocortisone hemisuccinate sodium for peri-

ods of several months without any clinical evidence of cortisonism. Finally, favorable clinical, sigmoidoscopic, and histological responses have been observed in patients with ulcerative colitis by the use, once or twice a day, of suppositories containing only 10 mg. of hydrocortisone as the hemisuccinate.

The therapeutic action would appear to resemble what happens in those skin diseases, such as atopic dermatitis, which respond favorably to topical application of hydrocortisone in a lotion or ointment. Absoption through the skin is very small, being of the order of 2 per cent, so that the systemic effect is negligible, but the favorable results can be impressive. An analogous improvement of the buccal mucosa has been observed in patients with severe recurrent aphthous stomatitis who were receiving amounts of hydrocortisone hemisuccinate sodium too small to have appreciable systemic effects.

Bromelin for Dysmenorrhea

Bromelin, which is a proteolytic substance extracted from pineapple stem, produced dramatic relief of the colicky pain in many patients with spasmodic dysmenorrhea according to A. C. Simmons (*Lancet* II: 827, 1958). This effect was at least partially due to relaxation of the smooth muscle of the cervix.

Preliminary studies were done before bromelin was used to treat dysmenorrheic patients. Tests for proteolytic activity showed that activity was maintained much better if the material was freeze-dried than if it was stored in solution. Experiments in mice showed that very large quantities of bromelin given intraperitoneally produced severe peritonitis but that slight contamination was not dangerous.

Good results or complete relief was obtained on 34 of the 48 occasions when bromelin was used in a tampon, or intravaginally to treat 30 patients with spasmodic dysmenorrhea, and the relief lasted for as long as 4 cycles in some women. The optimum time of treatment seems to be just before the onset of the period, but it may also be effective if given in the latter part of the cycle. Bromelin was also used to treat 10 patients with congestive dysmenorrhea and 2 with endometriosis; some relief was obtained if a spasmodic element was present.

Inhalation Aerosols

U. S. Patent 2,868, 691 was issued January 13, 1959 to Irving Porush and George L. Maison and assigned to Riker Laboratories. This covers "self-propelling compositions for inhalation therapy containing a salt of isoproterenol or epinephrine." The first claim is:

"A self-propelling pharmaceutical composition capable of providing a medicament in aerosol form suitable for inhalation therapy, comprising as the medicament a water-soluble acid-addition salt of a bronchodilator amine selected from the class consisting of isoproterenol and epinephrine, said medicament comprising between about 0.1 per cent and 2 per cent of the composition, as a cosolvent for said medicament, an aqueous ethanol mixture in an amount comprising between about 20 per cent to 40 per cent of the composition, the water in said cosolvent comprising between about 1.5 per cent and 2 per cent of the total composition, and as a liquefied non-toxic propellant component a halogenated lower alkane containing at least 1 fluorine atom and not more than 2 carbon atoms and having a vapor pressure of between about 20 and 65 pounds per square inch gauge at 70° F., said liquefied propellant component comprising substantially the remainder of the composition."

The specifications mention that other types of inhalation medication can be used in this type of preparation, and these include hormones, enzymes, alkaloids, steroids, analgesics, broncho-dilators, antihistamines, antitussives, anginal preparations, antibiotics and sulfonamides and synergistic combinations of these. Examples of the medicaments which may be employed in producing the compositions of this invention are: isoproterenol hydrochloride, phenylephrine, epinephrine, ephedrine, narcotine, codeine, atropine, ergotamine, scopolamine, colchicine, cortisone and alkyl nitrites, such as amyl nitrite or octyl nitrite.

Anabolic Hormone

The anabolic effects of the steroid norethandrolone have been investigated in four elderly underweight patients. by E. Woodford Williams and D. Webster (*Brit. Med. J.* 1958, No. 5110, 1447).

In each case there was a significant gain in body weight associated with marked nitrogen retention.

Total body water and extracellular water measurements were made before and after treatment, and the results supported the view that the weight gain was due to an increase in the lean body mass and not merely due to a simple fluid retention.

No androgenic or other unpleasant effects were observed from use of the drug.

Norethandrolone has definite anabolic properties and should prove to be of considerable value for increasing the lean body mass in individuals who consistently fail to gain weight on an adequate diet.

Sterazolidin Capsules (Geigy) contain 50 mg. Butazolidin, 1.25 mg. prednisone, 100 mg. aluminum hydroxide gel, 150 mg. magnesium trisilicate, 1.25 mg. homatropine methyl bromide in bottles of 100.

Furadantin Veterinary Ora-Bols (Eaton), for urinary tract infections in small animals and canine tracheobronchitis, contain 50 mg. of Furadantin in a dextrose excipient, in bottles of 50.

Abminthic (Pfizer) is dithiazanine iodide, for the treatment of most common intestinal worm infestations. It is available as 200 mg. tablets in bottles of 100.

Medaprin (Upjohn) tablets contain 1 mg. of methylprednisolone, 300 mg. of acetylsalicylic acid and 200 mg. calcium carbonate, for the treatment and maintenance therapy of mild rheumatic conditions. The tablets are supplied as bottles of 100.

Madricidin (Roche), for the relief of cold symptoms and protection against secondary infections contains in each capsule 125 mg. Madribon sulfonamide, 10 mg. of Thephorin tartrate antihistamine, 120 mg. acely androstenediol, 100 mg. magnesium trisilicate, 60 mg. dried alumistimulant. Available in bottles of 100 and 1000.

Stenisone (Organon) tablets contain 5 mg. prednisone, 20 mg. methyl androstenediol, 100 mg. magnesium trisilicate, 60 mg. dried aluminum hydroxide gel, 70 mg. calcium carbonate, 40 mg. magnesium carbonate, 66.6 mg. vegetable gum and 30 mg. oat binder. The preparation combines an antiarthritic steroid with an anabolic agent to counteract osteoporosis and antacid ingredients. It is packaged in bottles of 30 and 100 tablets.

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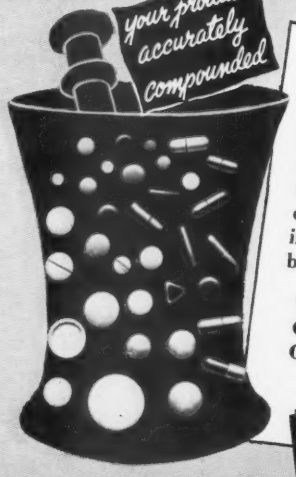

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Perfumer's Shelf

Men's Perfumes

From a survey of odor preference by men and women, P. Rovesti (*P. & E.O.R.* 50: 42, 1959) concludes that:

In most cases, preference was given to the fresher scents taken from coniferous plants, lavender, heptincarbonate, hesperides. The feminine types of perfumes, drawn from musk, amber, jasmin, sandalwood, tuberose, that enjoy considerable popularity and are highly erogenous (quotient: E.10) had the greatest number of negative replies.

All the perfumes selected for male use contained products that were in the highest degree anti-erotic (quotient: A.E.10) that is, essences of coniferous plants, lavender, heptincarbonate methyl, lemon, orange, bergamot, petit-grain. It would appear that these essences and these A.E. ingredients are believed to create a serene and tranquil atmosphere (according to the preference of both men and women) which is not sexually stimulating to the male, and thereby increases his working capacity.

The tests on the favorite types of scent for men corresponds exactly to the public taste, as shown by the men's perfumes already on the market, that savor of freshness, of woodlands, of Spring.

Scents for males give a greater sense of well-being and activate the physical and intellectual faculties, both in men and in women. By their psychomatic action, they also increase their output.

These same male scents have, in addition, marked antiseptic properties in the form of vaporous emanations, and so they have a further advantage when applied in social gatherings of all sorts. Their use should be recommended not only as hygienic products and toilet articles, but also in places where people, in large numbers, are wont to meet.

Grape Flavor

A formidable number of different varieties of grapes are grown throughout the world, most of them with an eye on some particular usage or market. The various classes of grapes may be divided according to G. B. Beattie (*P.E.O.R.* 50: 66, 1959) very broadly into table grapes, grapes primarily used for drying and raisin production, grapes grown specifically to form alcoholic wines, grapes for canning purposes, and finally grapes specially cultivated with an eye on juice production and the making of unfermented juice concentrates chiefly by low temperature vacuum processing or by freeze techniques, many of these being canned. Aside from straight or concentrated grape juice packs, most U. S. grape beverages appear to be wholly flavored by imitation or artificial bases. We can divide these American grape beverages of ready-to-drink type into the following classes:

(1) Purely synthetic base flavored productions, often with methyl anthranilate (which is found in the Concord grape variety and in some others) as the principal flavor ingredient rounded off with other synthetics, many of which it is believed are probably also constituents of the fruit. Usually a 'Concord' type of flavor is aimed at.

(2) 'Compound' bases, in which proportions of concentrated grape juice are blended with fortifying synthetics; with again the flavor of Concord grape juice in mind.

(3) Examples on either of the above two lines, but with 'wine flavor' as a leading characteristic. In some instances, small proportions of grape wines or cognacs may be introduced into the syrup, to enhance the vinous character, although this is often secured by esters, and, of course, in all instances, the final alcohol content is kept under the statutory limit for soft drinks.

(4) 'True Fruit' grape sodas. In by far the majority of cases, such U. S. products are labelled 'W.O.N.F.' (with other natural flavors) which means that although a fair amount of genuine grape juice may be used and synthetics are not present, the product is 'touched up' by natural extractives from other fruits, such as apples. If of the 'weak' type, the flavor base may be so characterized that the flavor on the palate is due almost entirely to the grape juice concentrate, but if only a comparatively few ounces per gallon syrup are required, the flavor must be mainly derived from other fruits. While no essential oil of grape is available, it is possible in concentrating grape juices, to trap the esters, etc., distilled off and return these to the concentrate in order to fortify the concentrate, and it might be possible to fortify a concentrate with additional esters derived from further bulks of concentrated grape juice to which no returns were made.

Pleasant and Unpleasant Odors

A prolonged stay in an atmosphere saturated with perfume may in some cases cause saturation with the result that the smell is no longer perceived, or a feeling of discomfort and the perfume is said to give a « headache ». Certain persons may tolerate the perfume, while others cannot.

A particular phenomenon occurs in certain chemical substances whose smell is of a complex character. The small can be agreeable with weak concentrations, and become disagreeable in strong concentrations: isoborneol, in very low concentrations has an agreeable smell of celluloid, very attractive, but with a strong concentration, it has a smell of something musty, very repulsive. Trimethylamine as a minute trace, has a smell

of the tide, agreeable, but in average concentrations, it has an ammoniacal smell which is unbearable.

A more particular case is that of substances, which in relation with the sex, and the hormonal condition, emit smells varying in intensity from one subject to another. With androstene-ol and andostene-one there is even, in relation with hormonal conditions, a complete change of the nature of the smell which may be floral and musky, very attractive for certain subjects or urinous and violently animal, very repulsive for other subjects. A change in the hormonal condition may change the sensation from one to the other, in this case, for the same subject, the product provokes an attraction at one moment, and a violent repulsion at other moments.

M. Giullot (*France et als.* Parf. 1: 5, 1958) insists that the observations on this phenomenon are troubled by the possibility of a nauseating state with women in a condition of pregnancy, a condition which sometimes determines a repugnance to all smells, even agreeable, which complicates the interpretation.

The interest recently attached to the disguising of disagreeable industrial smells by agreeable perfumes raises psycho-physiological problems. It appears that there has never been a neutralization of one of the smells by another, but simply a transformation of a repulsion reaction on the part of the subject, or an attraction reaction. Certain specialists are of the opinion that it is preferable to use, as a corrective perfumed substance, a product of an unknown smell, not identifiable, and to choose preferably in the range of fragrant substances approaching the products currently used in cosmetics (soap, beauty cream, etc.).

The reactions of attraction or repulsion towards perfumes often appears to put into play a stream of psychological processes where the remembrances, the habits of living, play a greater role than the spontaneous psychological reactions.

Oil of Seseli Indicum

The oil of *Seseli Indicum,* obtained by steam distillation (yield 2.5 per cent), is thin and almost colorless and has a characteristic aromatic odor resembling that of the seeds according to M. O. Farooq and G. S. Gupta (*P. & E.O.R.* 50: 32, 1959). The low-boiling fraction of the oil (47 per cent) has been found to be composed mainly of d-limonene; while a colorless crystalline acid occurs in the oil in free state as well as combined. Seselin, bergaptene and iso-valeric acid along with an unidentified acid (b.p. 227-231°) and a phenolic body (traces) are other substances present in the oil. The high-boiling part of the oil seems to be made up mainly of selinene; other sesquiterpenes and sesquiterpene alcohols also appear to be present and are under investigation.

Olfactory Preferences

Odors are intimately involved in the phase of development concerned with excretory functions, and, at a later age, play a role in the genital phase of psychosexual development. The data reported by M. Stein (*Arch. Neurol. Psych.* 80: 264, 1958) indicate that although adult olfactory preferences may have their roots in pregenitality, the significant changes in olfactory preference first become evident during the Oedipal phase, then become consolidated, and persist during the latency period.

A group of 300 healthy children between the ages of 3 and 12 years rated the odors of a series of odorous substances consisting of synthetic feces, synthetic sweat, and amyl acetate (banana-oil-like odor as to whether they liked or disliked them. Almost all of the 3- and 4-year-old children considered all of the odors to be pleasant. There was a significant decrease in the percentage of pleasant reactions to all of the odors in the group of 5-year-old children, and the response pattern to amyl acetate became significantly different from that to feces beginning at the age of 6. The increase in "like" responses to amyl acetate after the age of 5 may represent an example of sublimation, with diversion from sexual to nonsexual aims, since during latency the odor reminded boys of model airplane "dope" and girls of fingernail polish remover.

"Aero Incense"

A new series of specially designed "Aero Incense" fragrances has just been announced by Givaudan-Delawanna, Inc.

The fragrances are potent and long lasting and all have the typical incense-type odor associated with the burning product. These fragrances are very effective in covering mal-odors and have a long residual effect; they are available in such odor types as rose, sandalwood, wisteria, oriental and others.

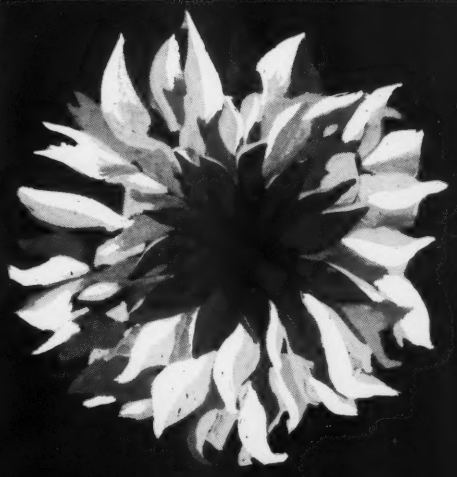
Odor Retention

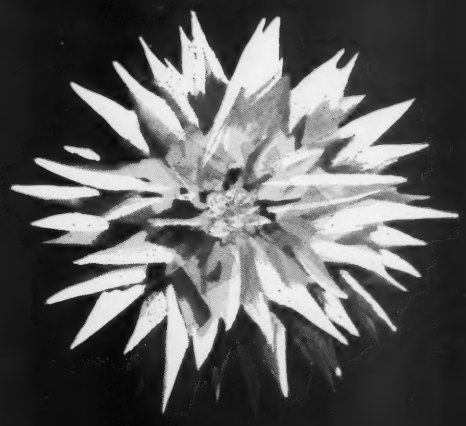
An increase in fragrance-retention life of 75-80 per cent over any previously known method is claimed for patented odor-retentive compounds just placed on the market by Tyrex Drug & Chemical Corp., with sales offices at 29 Pearl Street, New York 4. Described as saponified derivatives of natural essential oils, the new compounds are said to have the unique feature of combining a relatively low initial emission of the fragrance and an exceptionally long fragrance life. These twin features of low initial odor emission and greatly extended odor retention are expected to open applications for the new compounds in many types of cosmetics, in addition to their use in perfume. Scented nail polishes, lotions and hair lacquers, can be formulated with the aid of the new compounds to give a fragrance that will last for long periods, without being unduly strong immediately after use.

The new crystalline compounds are very light in color and will not affect the shade of any tinted cosmetic in which they are incorporated. The compounds are completely soluble in alcohol and other solvents, and are compatible and miscible with all ingredients commonly used in perfumes and cosmetics.

Hibitane Lozenges (Ayerst) contain 5 mg. of chlorhexidine dihydrochloride and 2.5 mg. benzocaine, for treatment of mild infections and irritations of the mouth and throat and is available in packages of 12 lozenges. Chorhexidine dihydrochloride is a potent chemical antibacterial effective in low concentrations in the presence of saliva, blood and pus.

Dumogran (Squibb) is a combination of methyltestosterone and ethinyl estradiol with vitamins and minerals for tissue building. The preparation is available in bottles of 60 and 250 tablets.





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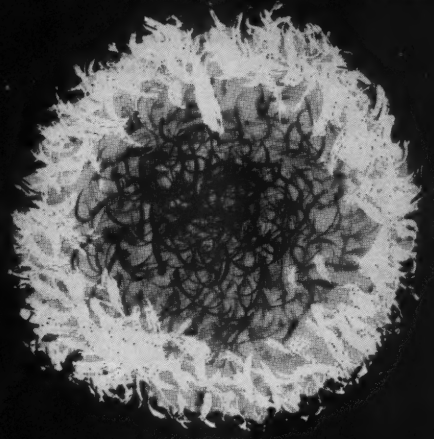

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Compounder's Corner

Furylglycine in Cosmetics

The imagination and prolific pen of B. Ciocca, P. Rovesti and G. Roccheggiani of the Milan Instituto di Ricerche su Derivati Vegetali have combined to bring forth another cosmetic additive which was announced at the American-Italian Cosmetic Symposium held in Milan last year and reported in "Soap, Perfumery & Cosmetics" for January 1959. According to these authors, they reported to the Twelfth International Congress of Cosmetology held in Venice at the beginning of the year the action of three new synthetic amino acids, dl-1-aminocyclohexane carboxylic acid, dl-1-amino-3-methyl carboxylic acid (sic) and dl-1-aminocyclopentane carboxylic acid. This work induced further studies in the field, especially to obtain amino acids that would be more economical. The result was furylglycine made by the hydrolysis of furylhydantoin which was in turn made from furfural, ammonium carbonate and potassium cyanide.

"Substantially, amino-cosmetics, in their cutaneous action, follow closely the principle on which is based what we call 'isodermia'; that is to say, an approach having due respect for the biochemical and physical-chemical properties of the skin, in relation to the absorption on the composition of mixtures to be assumed by the skin. Specifically, amino-cosmetic practice brings a special contribution to what may be termed 'histophilia'; that is to say, the necessary affinity which should exist between cosmetic raw materials and the physiological and constituent properties of the tissues.

'The protein balance is of fundamental importance for the skin, not only in tissue growth, in the production of specific proteins, hormones, enzymes, but also for the close relationships existing, for example, between lack of proteins and cutaneous dehydration, between lack of lipoproteins and dry skin and between a well-nourished skin and a healthy skin. . .

"And as in alimentation an indispensable minimum of proteins is necessary for sustenance, for the growth and for energy expenditure, in order to compensate for the daily consumption of amino-acids, in the same way amino-cosmetics represent an exogenous nourishment of the skin and an outside provision of nitrogenous substances needed to maintain and integrate its normal protein balance.

"Treatments and beauty products which are intended effectively to nourish the skin cannot obviously disregard (as mainly happens today) the nitrogenous component; it is for this reason that they have to aim at a balanced composition. . .

"Whereas healing and substitutive therapy has long been successful in using on a large scale the essential amino-acids as predigested aliments administered both parenterally and internally, so in dermatology a new use has been discovered; it is well known in fact that amino-acids, both in their biological complex and isolated, however applied locally or otherwise, do activate the cutaneous nourishment process and favor granulation and healing."

The article concludes with the following summary:

"In accordance with tests carried out by us, 5-furylhydantoin and furylglycine have proved to be efficaciously active products for the skin.

"Furylhydantoin, liposoluble, is different in its action from furylglycine because of its major hydrating power, while the amino-acid has a marked action in minimizing and correcting skin line and wrinkle formation.

"Both products have a remarkable nourishing and regenerating action.

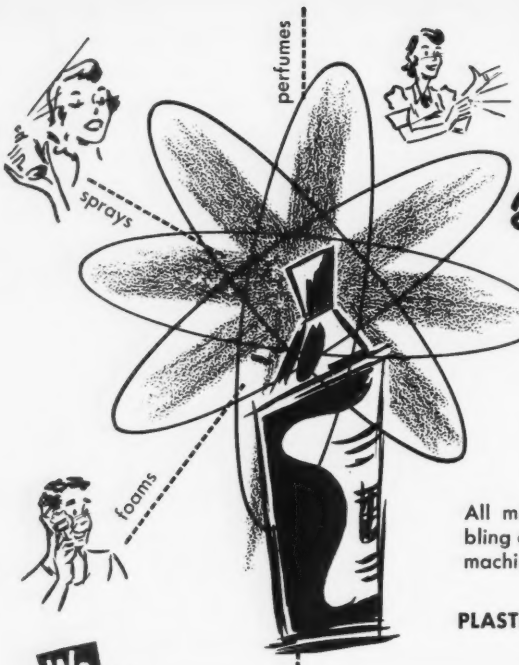
"In view of the low cost and convenience of these products we feel sure that they can find in cosmetics a wide application."

Comment: In calling this development to the attention of chemists and formulators, so that they will have some previous information on the subject when it is called to their attention by advertising and promotion people in their organizations, I will try to write comments with a restraint I certainly do not feel. The clinical evidence as presented is certainly so flimsy as almost to be transparent. Control experiments, with the base alone not including the so-called active material, were not reported. Evidence of absorption into the intact skin was not reported; objective, or in fact any evidence of utilization by the skin of the amino acid was not reported. No matter how you slice it, it's still Royal Jelly. J.K.

Ascorbic Acid Tablets

Although initially there may be only a slight loss of biological activity, deterioation of ascorbic acid tablets is evidenced by a discoloration or appearance of brown spots on the tablet surface.

Schon and Bennehson reported that ascorbic acid tablets prepared with lactose, arrowroot starch and talc were stable up to seven months at room temperature. Kato, *et al.* studied the effect of various metal sulfates compounded with ascorbic acid powder. They found that the order of metals influencing decomposition was Cu > Co > Mn > Zn > Fe. Vega studied the effect of moisture on ascorbic acid and found that when it is granulated with any substance containing even trace



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amounts of moisture, a large loss of ascorbic acid occurs both at the time of manufacture and during subsequent storage. He also observed that large losses occur in storage unless the tablets are kept at low temperature and away from air and moisture.

It was the purpose of this study by S. M. Blaugh, D. Chakravarty and J. L. Lach (*Drug Standards* 26: 199, 1958) to investigate ascorbic acid tablet formulations and methods of manufacture of ascorbic acid tablets to develop a formulation that will be stable under extremes of storage conditions (high temperature and humidity).

Assay results indicate the relative effectiveness of the various additives used. Corn starch paste was not a satisfactory granulating agent since the granules remained in contact with water during the drying period. Granulating with an alcoholic solution of ethyl cellulose not only accelerated drying and avoided contact with water, but also coated the granules with a protective film. It was found that anhydrous isopropyl alcohol was a more satisfactory vehicle for ethyl cellulose than anhydrous ethanol. Moreover, double granulation with ethyl cellulose yielded a product more stable than one prepared by single granulation.

The use of chelating agents slightly diminished the extent of oxidation of ascorbic acid in the tablet formulations. However, the use of these agents is no substitute for procedures and materials that avoid metallic ion contamination. Precoating ascorbic acid with ethyl cellulose and granulating with ethyl cellulose afforded good protection against accelerated oxidation due to metallic ion contamination.

Sodium bisulfite and thiourea showed little or no effect on the stability of the ascorbic acid tablet formulations.

Tablets stored in the constant temperature humidity cabinet at 60° discolored rapidly. Moisture greatly accelerated color formation. Kaolin as a moisture absorbent was not superior to lactose. Tablets prepared using anhydrous calcium sulfate as the filler in place of lactose exhibited the best color stability.

The disintegration times and hardness of the tablets prepared in this study were determined after the tablets had been stored for several months. No alteration in either property was noted.

Since moisture is a factor in the oxidation and discoloration of ascorbic acid tablets, the closure for containers of ascorbic acid tablets should be effective moisture vapor barriers. In a study by Blaug, Hickman, and Lach on moisture vapor transmission through closures, a metal screw cap lined with 0.040 inch solid polyethylene or with 0.0035 inch aluminum foil laminated to Kraft paper and coated with a vinyl coating was recommended.

ADM Quaternaries

Archer-Daniels-Midland Company now is producing commercial quantities of fatty quaternary ammonium compounds under the trade name of Adogen. The principal compound in this new series is dimethyldihydrogenated tallow, a straight chain nonsymmetrical quaternary ammonium chloride. It is representative of the type of quaternary having two fatty alkyl and two methyl groups which is used as a home laundry softener.

Other quaternaries soon to be added have applications in the textile industries; they are the most effective bactericides of the amine series and are used in antiseptic solutions, hair rinses, after shave lotions, deodorants, mouth washes, algicides, and for general mold and bacteria control.

In addition to the dimethyldihydrogenated tallow products, the company expects to produce a number of related derivatives as commercial demand develops. These will include methyltrihydrogenated tallow, methyl tricoco, methyl trilauryl and dimethyldiarachidyl - behenyl and trimethyl arachidyl-behenyl.

Mink Oil

R. W. Greeff & Co., representing the manufacturer, Collett-Week of Ossining, N. Y., is offering refined mink oil as the filtered and nonfiltered grades. Prices, according to grade and quality, range from $5.40 to $10.50 a pound. Tentative specifications are specific gravity 0.906—0.912; refractive index 1.4650—1.4670; iodine value 77.0—94.0; saponification value 194—208; free fatty acids 2—4 per cent; viscosity approximately 50 cps. and unsaponifiable matter 0.2—0.4 per cent.

Cutex Delicate Lipstick is an ultra-creamy formula for easy application and to leave a thin film on the lips. Six shades are keyed to fabric colors for 1959 and retail price is 79 cents plus tax. A counter display is offered and a national advertising campaign will break in major consumer magazines.

Cutex Mira-Base is a manicure base coat to increase polish wear. The base need not dry before application of polish and retails for 49 cents plus tax.

Cutex Nail Polish is now being made by a new process that eliminates white sedimentation to assure uniform color; the pearl polish is said to have more luster and greater wearing qualities.

Johnson & Johnson's Baby Liquid Cream contains hexachlorophene, modified lanolin and emollient, is supplied in a squeeze bottle and retails at 60 cents. Claims made are for soothing like a lotion, protecting like a cream, cleansing and refreshing delicate skin, to relieve chapping, help prevent diaper rash and skin irritations, no oily or greasy traces, antiseptic, stable.

Color Lift (Helena Rubinstein) is a home hair rinse guaranteed to last through five shampoos. The color penetrates the hair and will not run or flake off. It is a shampoo application and includes hair conditioning. Ten shades are available. The two ounce bottle, for two applications, retails at $1.50.

April Showers Deodorant Stick (Cheramy) now contains chloracel, an aluminum compound, so that it is antiperspirant as well as deodorant. The price remains at 59 cents.

Noludar 300 Capsules (Roche Labs.) each contain 300 mg. of methprylon, a non-barbiturate hypnotic, and are supplied in bottles of 100 and 500 capsules.

Madriqid (Roche Labs.) contains 125 mg. of Madribon antibacterial per capsule, available in bottles of 100 and 1000.

Modutrol (Reed & Carnrick) contains in each tablet 2 mg. of Sycotrol (1-piperidine ethanol benzilate hydrochloride), one mg. of scopolamine methyl nitrate and 200 mg. each of magnesium hydroxide and aluminum hydroxide. The preparation, for the treatment of peptic ulcer, is available in bottle of 50 tablets.

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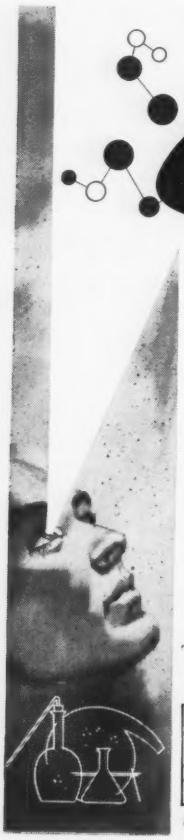

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(*Continued from page 165*)

animal practice exclusively. The American Veterinary Medical Association confirmed this trend when it reported in a 1955-1956 survey that 45 per cent of the total annual veterinary income was derived from pet animal practice. This increase in pet care affects veterinary drug sales proportionately and, if the trend continues, means that the small-animal market will eventually represent a major share of over-all veterinary drug sales.

Pet Practitioner Resembles Medical Doctor

Interestingly enough, in function the small-animal practitioner more closely resembles the medical doctor than does his large-animal colleague. Household pets, for example, are susceptible to many common human diseases and are even affected emotionally by the behavior of their owners. When a pet falls ill, he does so as a member of the family. A visit, usually by appointment, to the family veterinarian's office follows; hospitalization is available if the case warrants.

Since emotional factors are involved because of the close tie between pet and owner, the veterinarian feels the dual necessity of relieving the animal's physical distress and at the same time restoring the pet to its cherished place in the family circle. These human-medicine demands on the small-animal practitioner perhaps make him more alret to new drug developments and encourage him also to probe for possible new uses for drugs already on the market.

Veterinary Profession Growing

The number of practicing veterinarians has increased remarkably in the past ten years. During this period there has been a sizable expansion in veterinary service that seems to indicate a greater acceptance and understanding of the veterinarian's work by the general public.

There are approximately 17,000 veterinarians in the United States today—14,000 in general practice, the remainder largely in government service or in industry. Half of the veterinarians currently practicing have been in practice nine years or less. Animal hospitals, for large or small animals, or both, number 6,500.

A study by Pennsylvania State University showed only one veterinarian for each 17,000 animal health units; that is, 1 horse, 1 cow, 7 sheep, 5 swine, 100 poultry. According to the study, the "average across the nation is one veterinarian for each $1,175,000 of animal evaluation." It is estimated, moreover, that for every 20,000 persons in new urban areas, a veterinarian who specializes in small-animal medicine and surgery is needed. To meet this quota, many more veterinarians are needed than are graduated each year.

(*Continued on page 248*)

Skin Research

Skin Antiseptics

It is impossible to render skin sterile without destroying it. Skin antiseptics therefore are always something of a compromise, because they must cause the greatest possible destruction among the huge bacterial population of the skin while doing the least possible damage to the skin itself. Probably the skin antiseptic which most efficiently destroys bacteria is 2 per cent iodine in 70 per cent alcohol. Unfortunately iodine may cause skin irritation, and this has been reported even when the iodine was removed with alcohol within five minutes of application. Owing to the risk of skin reactions many surgeons prefer not to use iodine for routine skin preparation. Where bactericidal efficiency is of paramount importance, however—for instance, before lumbar puncture—iodine in alcohol remains the antiseptic of choice.

Many of the newer antiseptics damage skin much less than iodine, but some of them destroy skin bacteria very much less efficiently. Cetrimide and other quaternary ammonium compounds and hexachlorophene have been recommended as non-irritant antiseptics for preoperative preparation. But these antiseptics, of proven value in other fields, are not so satisfactory for this purpose. The quaternary antiseptics are considerably less effective on the skin than in vitro, and their rather slow action against gram-negative bacilli is a definite disadvantage. Hexachlorophene is useful mainly owing to its cumulative action—a property that does not manifest itself after a single application to the skin before operation. On the other hand, it is one of the few antiseptics not antagonized by soap and it can readily be incorporated in soap preparations. If hexachlorophene soap is used for washing three or four times a day, and ordinary soap is not used, there seems to form on the skin a film of antiseptic which kills bacteria already present and prevents the lodgement of others. In some maternity hospitals hexachlorophene soap has been used exclusively for washing babies in order to prevent staphylococcal skin infections, and its incorporation in a dusting-powder has been recommended. In surgical practice hexachlorophene is not suitable for pre-operative skin preparation because a single application has little effect, and it is satisfactory for the surgeon's hands only if he is prepared to use hexachlorophene soap every time that he washes them, in the hospital and at home.

Perhaps the most valuable of the newer antiseptics is chlorhexidine. It does not irritate the skin even when used repeatedly; it is very active against almost all bacteria; and a single application is effective. Lowbury has summarized the clinical applications of chlorhexidine, which he considers a valuable skin antiseptic. The form recommended for application to the patient's skin before operation is 0.5 per cent in 70 per cent alcohol, and this seems to be suitable for rinsing the surgeon's hands after the customary soap-and-water scrub. At the moment chlorhexidine is perhaps the best compromise between bactericidal effectiveness and harmlessness to the skin. Another agent which in the future may prove to be of great value is a chemical combination of iodine and a quaternary antiseptic. Frisch et al. found that it was by far the most effective of the skin antiseptics tested; it seemed to retain the strong bactericidal action of iodine but to have lost most of iodine's irritant effect on the skin.
—*The Lancet* II, 1164, 1958.

Oral Fungicide

Wilson defined the ideal antifungal agent as one which, safely administered internally, endowed the cells eventually destined to produce keratin with the power to resist fungi, this power persisting as the cells become keratinized. The first real step towards this ideal has followed from work in another field —the development of griseofulvin for use against fungal plant pathogens.

Griseofulvin is a colorless, neutral, thermostable substance only very slightly soluble in water; its structure was elucidated by Grove et al. in 1952. In 1955 a group at Glaxo Laboratories found that, in vitro, griseofulvin was notably active against pathogenic skin fungi, the minimum inhibitory concentration in broth for a variety of species ranging from 0.1 to 0.4 μg. per ml. It was also found to have remarkably low acute toxicity when administered orally to animals in very large doses. This year Gentles has shown that guineapigs experimentally infected with *Microsporum canis* and *Trichophyton mentagrophytes* responded quickly to small doses of griseofulvin given by mouth; and calves infected with *T. verrucosum* have been successfully treated with orally administered griseofulvin. Meanwhile studies with oral administration of ^{36}Cl-labelled griseofulvin have indicated good absorption and rapid excretion, while more recently griseofulvin has been detected in the hair of treated animals by extraction.

Because of the drug's low acute toxicity, it has been possible to examine the effects of very large doses administered intravenously and intraperitoneally. Paget and Walpole found that administration to rats of griseofulvin in doses of 200 mg. per

kg. body-weight intravenously and 2000 mg. per kg. intraperitoneally had a colchicine-like effect in temporarily arresting mitosis. Similar toxic effects are found with drugs in common use when given in very large amounts. Williams and his colleagues administer the drug to patients in doses of 2 g. daily by mouth; and this dosage, which seems to be effective, has so far had no serious ill effects.

Many months will pass before griseofulvin can be reliably evaluated; but if in the end it proves to be as efficacious and safe as early experience suggests, it will represent a notable advance.
—*The Lancet*, 1958 II, 1216.

Glycyrrhetinic Acid Pharmacology

Glycyrrhetinic acid has a remarkably low toxicity and can be applied to the skin with complete safety in dermatological conditions. R. S. H. Finney, G. F. Somers and J. H. Wilkinson (*J. Pharmacol.* 10: 687, 1958) confirmed that exceptionally large doses of glycyrrhetinic acid in animals have an antidiuretic action associated with changes in the metabolism of sodium and potassium; but do not cause kidney damage. Water retention was not seen with small doses used in human volunteers. The low solubility of glycyrrhetinic acid in body fluids has so far precluded parenteral administration in man, but this will be possible with development of more soluble derivatives. An important property of glycyrrhetinic acid is its complete freedom from glucocorticoid-like actions. While it has been shown that little absorption of these steroids occurs through normal skin this cannot be assumed in dermatological conditions where the protective dermal layers may be broken. Much remains to be discovered about the mode of action of glycyrrhetinic acid, but it offers a new approach to the treatment of inflammatory conditions.

Comment: The evidence for the use of glycyrrhetinic acid preparations on the skin is, to say the least, equivocal. Its use seems to have arisen from, or to be connected with attempts to find a substitute for expensive corticosteroids in dermatological practice. Where the verdict has been favorable, controls do not seem to have been used as well as they might, especially in determining whether or not the skin problem was self-limiting. The conclusive study on human skin is yet to be made.

Oral Antipruritic

This report by P. L. Williams (*N.W. Med.* 57: 1162, 1958) is concerned with trimeprazine (Temaril), which is the tartrate salt of *dl*-10-(3-dimethylamino-2-methylpropyl)-phenothiazine. Since preliminary investigations with trimeprazine had indicated that this drug, when taken orally, exerts a potent and seemingly specific antipruritic effect in such unrelated conditions as biliary cirrhosis, poison ivy, and neurodermatitis, it seemed worthwhile to undertake an evaluation of trimeprazine in a private dermatological practice to elucidate its antipruritic effect.

Ninety patients, in whom severe pruritus was a distressing and complicating factor in acute and chronic dermatoses and systemic diseases, were treated with trimeprazine in the course of the past year. The patients selected were chiefly those in whom pruritus had been completely or partially refractory to other forms of therapy, such as topical applications or systemic administrations of steroids, antihistamines, sedatives, and tranquilizers. The author concludes that trimeprazine is an effective antipruritic when given orally and that it can be administered in small daily doses. It produces no serious untoward effects, even upon prolonged administration, and permits a reduction in concomitant therapy.

Fluorescence in Keratin

There appears to be a fluorescent substance or a group of fluorescent substances normally present in keratinous materials even when those materials do not themselves fluoresce according to F. Levit (*A.M.A. Arch. Dermatol.* 79: 96, 1959). These substances are related to each other in so far as they are water-soluble but not soluble in fat solvents. They are similarly related to the fluorescent substance extracted from Microsporum-infected hairs. The precise chemical make-up of these substances remains to be determined.

In the case of scales from tinea versicolor it is not possible to state whether the fluorescence is due only to substances normally present in scale or to a substance produced through the effect of the infecting organism or to both.

Anti-Leprosy Ointment

A remarkable feature of the new I.C.I. antileprosy drug *Etisul* is that it is administered by rubbing on the skin. The active agent is ethyl mercaptan, a distasteful and evil-smelling substance which would pose many problems if it had to be taken by mouth, owing to the risk of the formulation breaking down and releasing ethyl mercaptan. So, from all standpoints, it is fortunate that the drug (chemically diethyl dithiol isophthalate) can be administered as an ointment.

Since April last year *Etisul* has been clinically tested at the Nigerian Leprosy Service Research Unit at Uzuakoli, Eastern Nigeria, by Dr. T. F. Davey, head of the unit. At the 7th International Congress on Leprology in Tokyo, Dr. Davey said that it is hoped *Etisul* will reduce appreciably the time a patient spends in a leprosarium, from two years to perhaps as little as three months.
—*Manuf. Chem.* 29: 501, 1958.

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Konakion (Roche Labs.) is a brand of phytonadione, synthetic vitamin K_1, now made available in 5 mg. oral capsules and in one mg. per half cc. ampuls for injection. The capsules are available in bottles of 50, the ampuls as boxes of 12.

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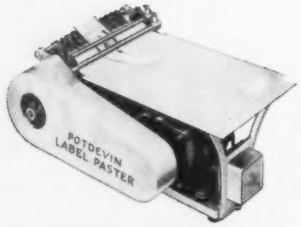

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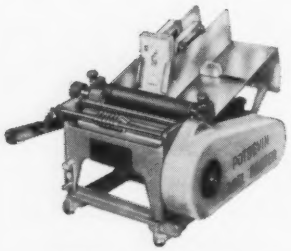

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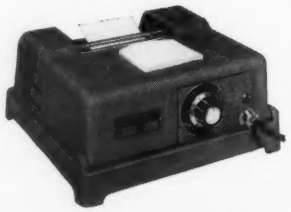

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Industry's Books . . .

The Health Of A Nation, *by Oscar E. Anderson, Jr., 333 pp., The University of Chicago, Press, (1958), cloth,* **$6.**

This is the story of Harvey W. Wiley and the fight for pure food. His work began in the 1870's, when the United States was still primarily an agricultural nation; it ended with his death in 1930, long after the stormy transition to an urban, industrial economy had been completed. By the 1880's, when market competition was reaching its frenzied height, Wiley saw the need for controlling such fraudulent practices as padding coffee with chicory and such harmful ones as the indiscriminate use of chemical preservatives. The adulteration of drugs with inert, ineffective fillers, the mass sale of worthless or dangerous patent medicines, he deplored as reprehensible. Unscrupulous manufacturers, he warned, should not be allowed to toy with a nation's health, and he insisted upon a pure food and drugs bill that would hold manufacturers strictly accountable for the purity and honest representation of what they put into their products. The end result of Wiley's efforts is the present Federal Pure Food and Drugs Act.

The Amphetamines, Their Actions and Uses, *by Chauncey D. Leake, Ph.D., Professor of Pharmacology, The Ohio State University, Columbus, 167 pp., Charles C. Thomas, Publisher, Springfield, Ill., (1958), cloth,* **$4.50.**

In a general way this book is an introduction to a study of the amphetamines. It is not a critical review either of their pharmacological actions or of their clinical use, but rather a survey of what seems to be significant information about them. It may disappoint pharmacologists who are expert in knowledge of these drugs, but it most likely will help physicians to use them wisely. If it aids physicians, lawyers, sociologists, law-givers and administrators, and other intelligent people to understand how the amphetamines act and how they may be used for individual and social benefit, it will have accomplished its purpose.

Fine Particle Measurement, *by Clyde Orr, Jr., and J. M. Dallavalle, 353 pp., The Macmillan Company, New York, (1959), cloth,* **$10.50.**

This is a detailed discussion of the important techniques currently used in research laboratories for the measurement of size, surface, and pore volume. Treating both the theory and application of these measurements, the authors provide a comprehensive description of more than seventy techniques including automatic scanning, the fixed-time method, the Hauser-Lynn method, gravimetric analysis, and liquid-phase absorption. An extensive up-to-date bibliography of approximately 400 references complements the text.

Epoxy Resins, *by Irving Skeist, Consultant, Skeist & Schwarz Laboratories, Inc., and George R. Somerville, Supervisor, Surface Coating Resins Group, Shell Chemical Corp., 293 pp., pocket size, Reinhold Publishing Corp., New York, (1958), cloth,* **$5.50.**

The author clearly describes these versatile new materials as casting and potting compounds, adhesives, plasticizers, and explains both the "how" and "why" of epoxy uses. The book gives the reasons behind each formulation to enable the reader to choose from the confusing and sometimes contradictory maze of available information. It also clarifies the puzzling array of trade names, and presents up-to-date formulations and procedures.

Vacuum Metallurgy, *Edited by Rointan F. Bunshah, Associate Research Scientist, College of Engineering, New York University, 472 pp., Illus., Reinhold Publishing Corp., New York (1958), cloth,* **$12.50.**

This is a series of lectures presented during the course on Vacuum Metallurgy sponsored by the Department of Metallurgical Engineering in cooperation with the Office of Special Service to Business and Industry, New York University, June 10-14, 1957. The book has particular importance to the missile, aircraft, atomic energy and electronics industries.

Gum Plastics, *by M. Stafford Thompson, Naugatuck Chemical Div., United States Rubber Co., 103 pp., pocket size, Reinhold Publishing Corp., (1958), cloth,* **$4.50.**

This work emphasizes the applications of impact-polystyrene, ABS polymers, and impact PVC, and covers the general properties, chemistry, and fabrication of these compounds. This is the first extensive treatment of rubber-modified plastic resins and their uses. The author describes their advantages in terms of product improvement, and shows how certain disadvantages of these materials can be overcome. Special attention has been given to new applications, new compounds, and a discussion of applications now in the development stage. This book provides product designers, engineers, and fabricators in those industries which use or could use plastics with the first basic reference on gum plastics.

Punched Cards, Their Applications To Science and Industry, Second Ed., *Edited by Robert S. Casey, W. A. Sheaffer Pen Co., 697 pp., Reinhold Publishing Corp., New York, (1958), cloth,* **$15.**

Description of the entire range of cards and equipment now available are covered in this work. In addition to the mechanical techniques of punched cards and related devices, the book also shows how to find, arrange, use, store and retrive information of any kind. Such considerations are a prerequisite to any system, and they can be applied to a simple collection of data in notebooks, on plain cards, in correspondence files, and finally to data handling by punched cards and electronic computers. The book can be profitable to anyone who has or uses a collection of facts, figures, things or ideas, from stamp collections to physical science.

Rocket Propellants, *by Francis A. Warren, Dept. of Chemical Research, Southwest Research Institute, 217 pp., Reinhold Publishing Corp., N. Y., (1958), cloth,* **$6.50.**

The purpose of this book is to provide technical men with basic information on the materials being used to propel the rockets and missiles of today, and to recount in an objective manner the fascinating story of rocket fuel development.

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COMING EVENTS . . . . .

FEBRUARY

22-25 **California Medical Association,** Sheraton-Palace Hotel, San Francisco (John Hunton, 450 Sutter St., San Francisco 8)

MARCH

3 **National Vitamin Foundation,** annual symposium, Sheraton-East Hotel, N. Y. C. (Mrs. R. D. Gnesin, N.V.F., 149 E. 78th St., N. Y. C. 21)

5 **Drug, Chemical & Allied Trades Section, New York Board of Trade,** annual dinner, Waldorf-Astoria Hotel, N. Y. C. (Helen I. Booth, D.C.A.T., 291 Broadway, N. Y. C. 7)

5-6 **Federal Wholesale Druggists' Assn.,** midyear meeting, Statler-Hilton Hotel, N. Y. C. (Ray C. Schlotterer, F.W.D.A., 2 Lexington Ave., N. Y. C. 10)

10 **Assoc. Consulting Chemists & Chemical Engineers,** luncheon meeting and panel, Shelburne Hotel, N. Y. C. (A.C.C. & C.E., 50 E. 41st St., N. Y. C. 17)

19 **Toilet Goods Assn.,** scientific meeting, Waldorf-Astoria Hotel, N. Y. C. (Kathryn Fitzpatrick, T.G.A., Americas Bldg., Rockefeller Center, N. Y. C. 20)

APRIL

1-3 **Pharmaceutical Manufacturers Assn.,** annual meeting, Boca Raton Club, Boca Raton, Florida (Dr. J. O'Neill Closs, 30, Rockefeller Plaza, N. Y. C. 20)

5-10 **American Chemical Society,** national meeting, Boston, Mass. (R. M. Warren, 115 Sixteenth St., N.W., Washington 6, D.C.)

5-14 **American Chemical Society,** national meeting, Cleveland, Ohio.

13-15 **American Management Assn.** packaging conference, Palmer House, Chicago, Ill. (A.M.A., 1515 Broadway, N. Y. C. 36)

13-17 **American Management Assn.** National Packaging Show, International Ampitheatre, Chicago, Ill. (See above.)

13-17 **American Society for Pharmacology and Experimental Therapeutics,** Atlantic City (Dr. Harold Hodge, University of Rochester, Rochester 20, N. Y.)

13-18 **American Society of Biological Chemists,** Atlantic City (Dr. F. W. Putnam, University of Florida Medical School, Gainesville, FLa.)

15-17 **British Congress of Cosmetic Science,** University College, London (Dr. R. H. Marriott, County Laboratories Ltd., Honeypot Lane, Stanmore, Middlesex, England—by March 1)

16 **Toilet Goods Assn.,** scientific meeting, Waldorf-Astoria Hotel, N. Y. C. (Kathryn Fitzpatrick, T.G.A., Americas Bldg., Rockefeller Center, N. Y. C. 20)

(Continued on page 246)

Reader's Questions . . .

Suntan by Mouth: *I have heard and read a bit about pills that can be taken by mouth to give a better and deeper suntan. Can you give me general information and some sort of summary on this subject?* MIAMI

In the October 1958 "Compounder's Corner" a rather extensive abstract of material which had appeared in the "Journal of the American Medical Association" was reproduced. This described the uses and mechanism of action of methoxsalen, the chemical compound that increases skin pigmentation after exposure to the sun. The compound itself is 8-methoxypsoralen. Much authoritative information about this compound is given in "New and Nonofficial Drugs."

When the drug is applied in an ointment base directly to the skin which is then exposed to artificial ultraviolet or sun light, the skin is burned more readily, the burning action of the light being intensified. With careful treatment and exposure to light, the net result will be quicker development of deeper tan. More surprising and certainly more interesting, is the fact that a 10 mg. tablet taken daily by mouth, followed by exposure to active light, will cause quicker and deeper tanning, with reduced burning. The drug, either orally or in oral and topical combination, has been used with some degree of success in the treatment of vitiligo. This is a disease in which areas of the skin, small or sometimes quite extensive, lose pigment and exhibit a bleached appearance. Treatment with methoxsalen will not always lead to the desired degree of repigmentation. From this is experience, the drug was tried for suntanning, especially in those with extremely light skin who tanned little or not at all. For the most part, results were good.

Limitations on the use of this drug for cosmetic suntanning are, however, of utmost importance. The drug will tend to cause gastric disturbances in some subjects; it is not yet known whether or not prolonged use is completely safe; the possibility of harm to the user has not been completely ruled out. As of now, the product can be obtained only with a prescription.

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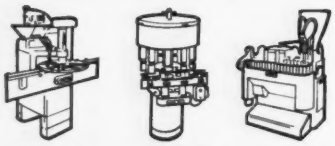

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17 **Parenteral Drug Assn.,** Edgewater Beach Hotel, Chicago (A. D. Herrick, Executive Director, P.D.A., 39 Broadway, N. Y. C. 6)

20 **American Society of Perfumers,** annual symposium, Essex House, N. Y. C. (Edward Shuster, van Ameringen-Haebler, Inc., 521 West 57th St., N. Y. C. 19)

28 **Association of Consuting Chemists & Chemical Engineers,** symposium and banquet, Shelburne Hotel, N. Y. C. (A. B. Bowers, Director of Publicity, A.C.C. & C.E., 50 E. 41st St., N. Y. C. 17)

29-30 Packaging & transportation symposium sponsored by **Manufacturing Chemists' Assn.,** Engineering & Scientific Center, Cleveland, Ohio. (M. F. Crass, Jr., Secretary, M.C.A., 1625 Eye St., N.W., Washington 6, D.C.)

MAY

7 **Society of Cosmetic Chemists,** spring meeting, Hotel Commodore, N. Y. C. (Robert A. Kramer, Evans Chemetics, Inc., 250 E. 43rd St., N. Y. C.)

10-13 **Proprietary Assn.,** Greenbrier Hotel, White Sulphur Springs, West Virginia (Dr. Howard A. Prentice, 810 18th St., N.W., Washington 6, D.C.)

10-13 **Flavoring Extract Manufacturers Assn.,** annual convention, Hotel Roosevelt, N. Y. C. (Robert Krone, Fritzsche Bros., Inc., 76 Ninth Avenue, N. Y. C.)

10-15 **Society of American Bacteriologists,** St. Louis, Mo. (E. M. Foster, Dept. of Bacteriology, University of Wisconsin, Madison 6, Wisc.)

12-14 **Toilet Goods Assn.,** annual meeting, Waldorf-Astoria Hotel, N. Y. C. (Kathryn Fitzpatrick, T.G.A., Americas Bldg. Rockefeller Center, N. Y. C. 20)

17-19 **American College of Apothecaries,** annual convention, Hotel Roosevelt, New Orleans (A.C.P., Hamilton Court Hotel, 39th & Chestnut Streets, Philadelphia 4)

18-20 **Chemical Specialties Manufacturers Assn.,** midyear meeting, Drake Hotel, Chicago (Herbert W. Hamilton, 50 E. 41st St., N. Y. C. 17)

18-21 **Glass Container Manufacturers Institute,** spring meeting, Greenbrier Hotel, White Sulphur Springs, West Virginia (H. W. Kuni, 99 Park Ave., N. Y. C. 16)

25-28 **American Society of Mechanical Engineers,** design engineering show and design engineering conference, Convention Hall, Philadelphia (Clapp & Poliak, Inc., 341 Madison Ave., N. Y. C. 17)

JUNE

1-4 **American Dermatological Assn.,** Claridge Hotel, Atlantic City (Dr. Wiley M. Sams, 25 Southeast Second Ave., Miami, Fla.)

8-12 **American Medical Assn.,** annual meeting, Atlantic City (Dr. George F. Lull, 535 N. Dearborn St., Chicago 10)

12 **Parenteral Drug Assn.,** dinner meeting, Sylvania Hotel, Philadelphia, Penna.

AUGUST

11-13 **Western Packaging & Materials Handling Exposition,** Civic Auditorium, San Francisco

16-23 **American Pharmaceutical Assn.,** annual meeting, Netherlands-Hilton Hotel, Cincinnati, Ohio (Dr. Robert P. Fischelis, 2215 Constitution Ave., N.W., Washington 7, D.C.)

SEPTEMBER

13-18 **American Chemical Society,** national meeting, Atlantic City, N. J. (Alden H. Emery, Executive Secretary, 115 Sixteenth St., N.W., Washington 6, D.C.)

17-20 **Drug, Chemical & Allied Trades Section, New York Board of Trade,** annual meeting, Sagamore Hotel, Bolton Landing, Lake George, N. Y. (Helen I. Booth, D.C.A.T., 291 Broadway, N. Y. C. 7)

19-23 **Federal Wholesale Druggists' Assn.,** annual convention, Greenbrier Hotel, White Sulphur Springs, West Virginia (Ray C. Schlotterer, F.W.D.A., 2 Lexington Ave., N. Y. C. 10)

OCTOBER

14-16 **Parenteral Drug Assn.,** annual meeting, Statler Hotel, N. Y. C.

NOVEMBER

7-12 **National Wholesale Druggists' Assn.,** Americana Hotel, Bal Harbour, Fla. (Harry A. Kimbriel, N.W.D.A., 60 East 42nd St., N. Y. C. 17)

9-12 **Glass Container Manufacturers Institute,** fall meeting, Arizona-Biltmore Hotel, Phoenix, Arizona (H. W. Kuni, 99 Park Ave., N. Y. C. 6)

16-18 **Packaging Institute,** national forum, Hotel Statler, N. Y. C. (Charles A. Feld, P.I., 342 Madison Ave., N. Y. C. 17)

17-20 **Packaging Machinery Manufacturers Institute Show,** New York Coliseum, N. Y. C. (Albert R. Stevens, Elgin Mfg. Co., Inc., Elgin, Ill.)

DECEMBER

1 **Toilet Goods Assn.,** scientific section, winter meeting, Waldorf-Astoria Hotel, N. Y. C. (Kathryn Fitzpatrick, Americas Bldg., Rockefeller Center, N. Y. C. 20)

7-9 **Pharmaceutical Manufacturers Assn.,** mid-year and eastern regional meeting, Waldorf-Astoria Hotel, N. Y. C. (J. O. Closs, 30 Rockefeller Plaza, N. Y. C. 20)

8-10 **Chemical Specialties Manufacturers Assn.,** annual meeting, N. Y. C.

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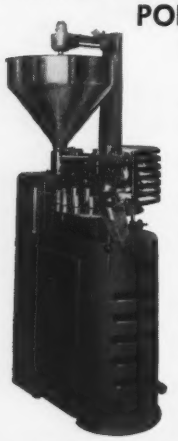

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(Continued from page 238)

Veterinarian Vital to Common Welfare

As guardian of the nation's livestock resources, the veterinarian is vital to the maintenance of the health of our animal population and consequently to the well-being of the nation as a whole. He functions also in a preventive-medicine capacity of great importance to human beings and animals alike, for diseases common to both human and animal medicine include fatal or potentially fatal disorders such as undulent fever or brucellosis, rabies, septic sore throat, erysipelas, tularemia, encephalitis and psittacosis.

The Veterinarian's Responsibility and Usefulness

Modern transportation of livestock has further complicated control of animal diseases, bringing with it increased demands on the veterinary profession. Up to 30 years ago livestock was not shipped so widely and diseases among the transported animals were confined to the area or state where the outbreak occurred. Today animals are shipped to every state in the Union and, as a result, diseases that were once a localized problem have become widespread. Erysipelas, formerly considered endemic to South Dakota, Minnesota, Iowa and Nebraska, is now encountered in any section of the country. Vesicular exanthema, a disease of swine, was found in 16 states within two weeks after a shipment of affected hogs had passed through a Midwestern stockyard.

While better shipping facilities have tremendously broadened the movement of animals and thus added to the veterinarian's responsibility, improved roads and highways and easy automobile transportation have, on the other hand, made possible many more patient calls and office visits. The modern offices, hospitals and cattle housing that have replaced the livery barn and dingy back rooms have meant greater efficiency in meeting increased demands on the veterinarian's time.

Veterinary Income Increasing

A phenomenal rise in the average veterinarian's income has accompanied the changes in the animal health picture, thus altering a longstanding income pattern. As already stated, 45 per cent of the total annual veterinary income in the United States is derived from pet animal practice. Geographically this income varies from region to region and from state to state, ranging from a high of 55 per cent for the Northeast and West to a low of 28 per cent for the Middlewest. Income from swine practice is almost non-existent, except in the "cornbelt," while that from cattle practice is approximately the same in all regions. Total dollar income (1955 estimate) is $132,000,000 annually. •

(*Continued from page 167*)

odor covered by the pronounced top notes.

A recent development has been the introduction of various inert gases, not only for food products but for cosmetic and perfume products as well. The first important product of this kind to appear with nitrogen under pressure has been toothpaste. The various inert gases, such as nitrogen and argon, are not meant to replace the refrigerant type of propellants whose chief feature, although they may alter the odor, is to produce a mist or foam.

THE SKIN GAME

(*Continued from page 169*)

to soak up moisture as well as kill the pathogens. Disease inciting fungi require warm moisture to remain viable.

Alcohol-based fungicides are very effective in treating persistent, aggravated recurring fungal diseases with adjuvants such as menthol, tincture of benzoin, thymol or copper sulfate solution and with salicylic acid as the active fungicide. When used as an inunction, any of these salicylic acid compounds, particularly in the groin region, appear to act like a counterirritant which is painful for a few minutes. Apparently this painful local reaction is an indication of its effectiveness, for, after a few daily applications, the pruritic, erythematous rash disappears along with its accompanying desquamation of the epidermal cells. Moisture such as perspiration or infected exudates should be absorbed from the affected area. When dehydrating drugs are used, reinfection is far less likely to take place, and the results are less apt to be prolonged until the next summer, when infection or reinfection can start the cycle all over again.

Fungicide treatment may be followed by inunction with a very heavy, non-absorbable vehicle such as ceratum (wax) or hard paraffin which does not melt at body temperature. These ointments are very heavy and not easily rubbed off, and consequently they maintain their adhesiveness and dehydrating effect.

A useful prescription for such a cerate is white wax 30, white petrolatum 20, benzoinated lard 40 and alcohol 10. This prescription has several therapeutic indications: (1) being heavy, it adheres to the skin; (2) it absorbs moisture and prespiration; and (3) it acts as an astringent by closing the sudorific glands. Therefore, if a prescription such as this is used after inunction with a salicylic, propionate or caprylic antifungal compound, reinfection is far less likely to occur.

Conclusion

The ideal therapy for the common fungal infections based on clinical data and pharmacological ob-

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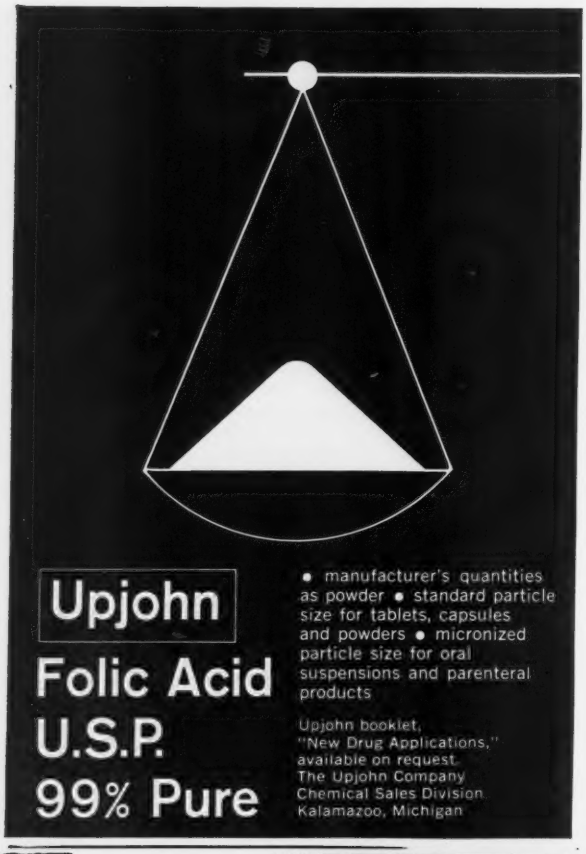
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servations should:

(1) have a high, lasting fungicidal coefficient, as does salicylic acid in 5 to 10 per cent strength;

(2) possess a high degree of penetration, as in the various alcohols;

(3) have astringent properties, such as in copper sulfate solution;

(4) possess hygroscopic or dehydration activity as in calcium chloride or inert powders such as talc or chalk;

(5) be a grease-free non-absorbable vehicle such as ceratum (white wax) or hard paraffin;

(6) have antipruritic action as in eucaine hydrochloride, or dimethisoquin hydrochloride;

(7) possess heavy, stable protective action as zinc oxide in a cerate base; and

(8) incorporate additional antibactericidal properties such as ethyl alcohol, mercurials and arsenicals, if necessary, to combat the numerous secondary invaders apt to be associated with mycotic diseases of the skin.

It should be noted that physiological and chemical incompatibility would be likely if all of these were compounded into one preparation for dispensing. However, the first three might combine successfully as a primary fungi inhibitor, and the last three or four as the post medicinal treatment aimed at prophylaxis in reinfection. As a direct result of painstaking medical and pharmacological research, the drug and cosmetic industry have any number of fine preparations on the market which meet these suggested specifications.

Contraindicated in any phase of fungus infection, because profuse spreading can result, is scratching, squeezing, excess rubbing or opening of any localized infective areas.

Bibliography

Bryan, A. H. and Charles. Bacteriology. Barnes & Noble, New York. (1957).
Conant, N. F. Manual of Clinical Mycology. W. B. Saunders Co., Philadelphia. (1954).
Dubos R. J. Baterial and Mycotic Infections of Man. J. B. Lippincott, Philadelphia. (1952).
Merck Manual. Merck & Co., Rahway, N. J. (1956).

PROPYLENE GLYCOL

(*Continued from page 171*)

ly and comfortably and is absorbed at the desired rate. In vanishing creams, deodorant creams, and other cosmetic preparations with a high concentration of stearic acid, propylene glycol prevents an unpleasant "rolling" effect during application. In cleansing creams, cleansing lotions, shave creams and hand lotions, propylene glycol contributes to a soothing sensation which consumers associate with thorough, gentle action.

Some of the many volume products in which propylene glycol is used include toothpaste, mouth rinse, shampoo, hair grooming products, hair conditioning creams and lotions, hand lotion, cuticle remover, shave cream, after-shave lotion, astringent, foot balm,

body lotion, deodorant, antiperspirant, suntan lotion, baby preparations and facial creams and lotions of every type, as well as makeup in lotion, cream and stick forms. Significantly, many of the successful new cosmetic products contain propylene glycol. Cosmetic emulsions, for instance, deep cleansing lotion and liquid face make-up, 24-hour lipstick, eye make-up, fluoride and ammoniated dentifrices, are outstanding examples.[7, 8] All represent advances in cosmetic technology and in the formulation of products with intrinsic consumer appeal.

References

1. **Kirk and Othmer,** *Encyclopedia of Chemical Technology.* **7:** "Glycols."
2. **Curme & Johnston,** *Glycols.* Reinhold, 1952.
3. **Greenberg & Lester,** *Handbook of Cosmetic Materials.* Interscience, 1954.
4. **Harry,** *Cosmetics—Their Principles and Practices.* Chemical Publishing Co., 1956.
5. **Blank, I. H.** Mechanism of the action of agents for the relief of dry skin. Proc. Sci. Sec. TGA. **23:** 1955.
6. **Powers, D. H.** and C. Fox. A Study of the effect of cosmetic ingredients, creams, and lotions on the rate of moisture loss from the skin. Proc. Sci. Sec. TGA, **28:** 1957.
7. **Sagarin, et al.,** Cosmetics—Science and Technology. Interscience, 1957.
8. **Keithler,** Cosmetic Formulary. Drug and Cosmetic Publishing Co. 1958.

CLINICAL RESEARCH

(*Continued from page 173*)

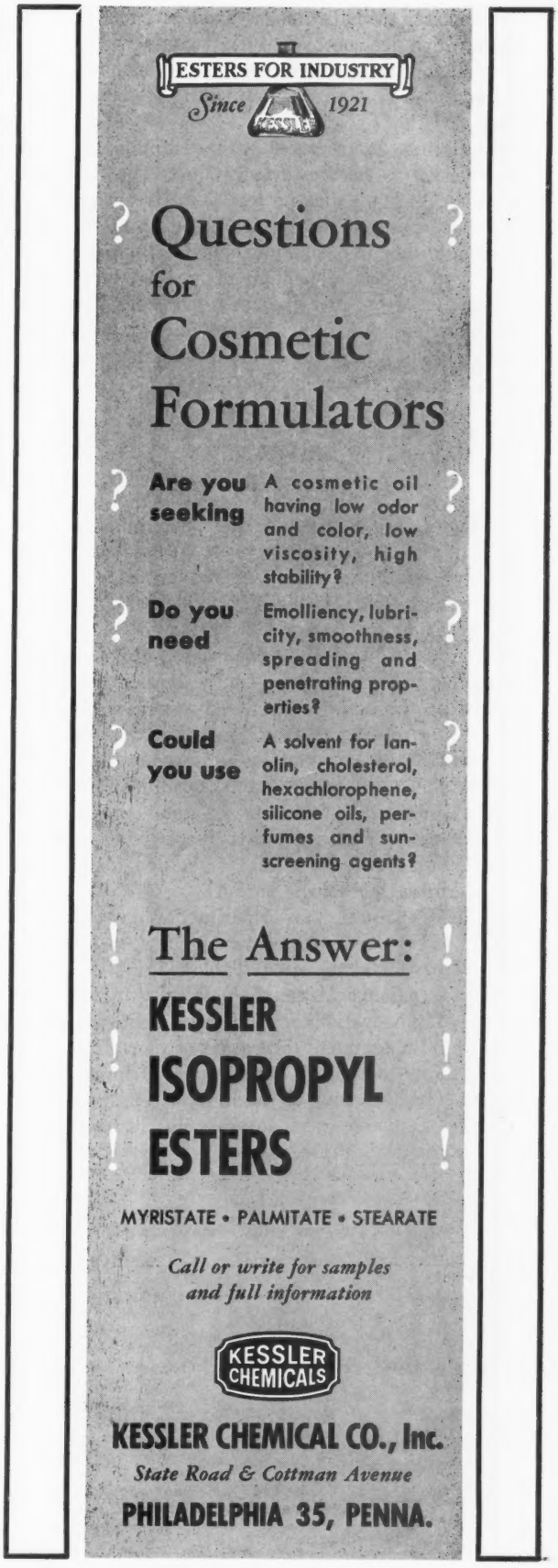
supervision of experienced investigators, these organizations can provide rapid and competent investigation of cosmetic products. Institutions are particularly useful when long-range evaluations are needed, but rarely do they have scientific staff with sufficient free time to devote to project supervision. In these instances it is often necessary to engage consultants from nearby professional schools or hospitals.

How does one place a clinical program in these facilities? In the case of therapeutic products, where there is even just a small opportunity of gaining new scientific knowledge or a better mode of treatment, the problem is simplest. In a hospital, clinic, or professional school, the requirement usually is reimbursement of out-of-pocket expenses, plus a grant-in-aid for personnel or equipment needed for basic research. When the studies are placed with individuals, arrangements usually are on a personal-fee basis.

With respect to cosmetic products, where the research studies are largely in the "service" category, payment of subject fees, plus equipment, supplies or monetary grants, are in order. It is not possible to provide any range of costs for studies in these various fields, but generally they are judiciously related to the amount of time devoted by the investigators.

Two important principles must be considered in negotiations with these groups. Cooperation will be more easily attained if the investigator is assured that his name or that of his facility will not be used in advertising without prior written permission. It is also important to provide with assurance that rights to publication of results in scientific journals remain strictly the prerogative of the investigator.

Those companies with scientific units regularly use these methods and facilities for conducting clin-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ical research. What, then, is available, for the company which does not have such personnel? There are several commercial organizations and many individuals who specialize in providing services of this kind.

In closing, I can not resist the temptation to refer once again to my favorite product. We are quite proud of the fact that no less than five original articles reporting clinical research on Bufferin have been published in official journals. During the coming year, we expect publication of at least three more articles reporting more reecnt research findings. We truly are convinced at Bristol-Myers that clinical research is a key factor in the development and promotion of proprietary products.

INHALATION

(*Continued from page 175*)

additional aerosol exposure; one pair of animals in the sub-group ("Bl" pair) was to be exposed through 60 days, while the other pair was to continue exposure through 90 days ("B2" pair). An additional subgroup of four survivors ("C" sub-group), also divided into pairs ("Cl" and "C2" pairs) was to be observed without further aerosol exposure, the pairs being observed up through 60 and 90 days respectively. The remaining survivors in each test group, a maximum of four animals, were to be sacrificed at the 45-day point ("A" sub-group) and terminal pathologic studies initiated. At the end of their respective exposure or observation periods, the animals in the B and C sub-groups were also scheduled for sacrifice and terminal pathologic study.

2. Experimental data. Experimental data were collected at regular intervals throughout the investigation. These data, shown in Table III, included body weights, radiological and hematologic studies, urine analyses, observations for abnormal behavioral reactions, and a complete tabulation of mortality.

Terminal pathologic studies were conducted on animals at the time of sacrifice or death and consisted of complete gross autopsy plus histopathologic examination of selected tissues.

TABLE 3

General Type of Data	Experimental Data: Time Interval Collected	Composition of Data
1. Growth	7 days	Body weights
2. Hematology	30 days	Hemoglobin
		Hematocrit
		Total leukocyte count
		Differential leukocyte count
3. Urine Analyses	30 days	Glucose
		Albumin
		Microscopic elements
4. Radiology	30 days	Thoracic films
5. Observation	Daily	General examination for abnormal reactions and mortality
6. Pathology	45, 60, and 90 days and at natural death	Gross autopsy
		Histopathologic studies

Results

A. Body Weights

The weekly mean body weights for each of the four main groups of guinea pigs cover the first 45 days of the investigation, and no significant differences in body weight gains between the various main groups were noted. During this period, all 12 animals within each main group received identical treatments. Treatment differed only between groups, not within them, and hence each calculated group mean was not influenced by treatment differences within the group.

As indicated earlier, the course of the test protocol changed after 45 days, at which point the animals within each main group were divided into subgroups, either to undergo different aerosol exposure schedules or to be observed without further aerosol exposure for different time intervals. Thus, treatments differed within each main group; also, some animals were sacrificed. These factors limited the significance of mean body weight data since not only were fewer animals available in each main group but even these were undergoing different treatments. Nevertheless, the limited weight data available on comparable sub-groups did not reveal any significant differences between them.

B. Hematologic Studies and Urine Analyses

The data accumulated in the hematologic studies and urine analyses conducted on animals in the four main groups at monthly intervals throughout the test showed no significant abnormalities.

C. Radiology

Examination of anterior-posterior thoracic films made monthly on guinea pigs of the four main test groups did not indicate any group differences.

During the investigation, radiological findings consistent with a diagnosis of pneumonia were noted in some cases, especially among guinea pigs still undergoing aerosol exposure. These findings were not restricted to guinea pigs undergoing exposure to any particular aerosol but occurred sporadically in all four main groups.

D. Mortality

The mortality data are shown in Table 4. All deaths shown in the table occurred during the first half of the test period. From zero to two animals succumbed in each main group. There was no evidence that the few deaths which occurred could be ascribed to aerosol toxicity per se.

TABLE 4

Mortality			
Main Group	Experimental Material	Number Animals Tested	Number Animals Dead
I	Commercial Hair Spray No. 1	12	2
II	Commercial Hair Spray No. 2	12	0
III	Incomplete Hair Spray Formulation No. 1	12	2
IV	Incomplete Hair Spray Formulation No. 2	12	1

E. Reactions

No reactions indicative of aerosol toxicity per se were observed among the experimental animals in any experimental group during the investigational period. Evidence of pneumonia was noted sporadically in animals of all four main groups.

F. Pathology

1. Gross Pathology. Tissues and organs examined at gross autopsy on animals which were sacrificed or died during the test were the following: brain, heart, lungs, trachea, spleen, liver, kidneys, stomach, small intestine, large intestine, pancreas, gonads, adrenal, lymph nodes, urinary bladder, and thyroid.

The only gross finding, noted in each of the four main experimental groups, was evidence of pneumonia. Not all animals within each group exhibited gross pulmonary changes consistent with a diagnosis of pneumonia but such changes were noted fairly frequently.

All other tissues and organs examined grossly appeared normal.

2. Histopathology. Tissue specimens of lung, liver, spleen, and lymph nodes were taken for preparation of microsections. Specimens of other organs and tissues were preserved for possible later study.

One set of microsections of lung, liver, spleen, and lymph nodes were stained with Haemotoxylin and Eosin (H & E) and another set was stained with the Periodic Acid-Schiff Reagent (PAS). Still other microsections were stained with Congo Red.

The H & E slides were examined for general histopathologic changes while the PAS and Congo Red stains were used for more particular purposes.

The results of the histopathologic studies on the H & E sections confirmed the sporadic occurrence of pneumonia in the animals from all experimental groups. Other than this finding, however, no significant histopathologic changes were noted. In no instance were findings noted consistent with either pulmonary thesaurosis or pulmonary alveolar proteinosis.

The percentage of animals in each of the four experimental groups exhibiting pathologic pulmonary changes consistent with either acute lobar pneumonia (bacterial-type) or chronic interstitial pneumonitis (viral type) was about the same, being of the order of 30 per cent.

In our experience, this incidence of pathologic pneumonic change is greater than that which occurs among normal untreated guinea pigs. It is believed that the rather stringent test conditions contributed to the development of pneumonia among the experimental animals. It would seem likely that the thrice-daily aerosol exposure, which subjected the animals to sudden, temporary chilling, conceivably could have increased the incidence of pneumonia. In order to provide direct experimental evidence on this question, experiments are currently being conducted in

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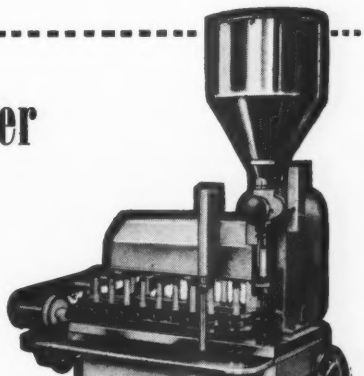

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our laboratories using cold air bursts instead of aerosol bursts. The evidence accumulated thus far in these experiments is in favor of the opinion offered, namely that repeated, periodic chilling increases the incidence of pneumonia among normal guinea pigs.

As would be expected, the PAS stained microsections revealed the presence of PAS positive material in practically all of the tissues examined. However, no group differences were found, neither with respect to relative amounts present nor with respect to the tissue loci of PAS positive material. These PAS stained tissues were not only compared within and between the four experimental groups, but also with respect to tissues obtained from normal, untreated guinea pigs sacrificed by various methods. Regardless of the method of sacrifice (ether, nembutal, decapitation) the normal untreated tissues were also found to contain PAS positive material in amounts and in tissue loci comparable to treated animals' tissues.

Examinations of the Congo Red microsections also did not reveal any significant differences between Congo Red positive material found in tissues from experimental animals in the four groups compared to each other or with respect to tissues from untreated animals.

Summary

An investigation was undertaken to evaluate the effects in experimental animals of exposure to aerosol hair spray formulations. Two complete and commercially available hair spray formulations were investigated along with two incomplete "treated control" formulations, one containing polyvinylpyrrolidone, ethyl alcohol vehicle and propellant, and the other vehicle and propellant alone.

Over the main period of the investigation, 45 days, no evidence was accomulated which could be interpreted as indicating any differences between effects on animals exposed to the two "test" hair sprays and the two "treated controls." Limited, preliminary experimental evidence, obtained on fewer animals up through a 90-day period, also revealed no significant differences between the four formulations evaluated.

There was no experimental evidence to substantiate the development of pulmonary thesaurosis or pulmonary alveolar proteinosis as a result of the aerosol exposures.

REFERENCES

1. Rosen, S. H., Castleman, B., and Lubow, A.: Pulmonary alveolar proteinosis, *New England Journal of Medicine* **258,** 1123 (1958).
2. Bergman, M., Flance, I. J., and Blumenthal, H. T.: Thesaurosis following inhalation of hair spray; a clinical and experimental study. New England Journal of Medicine **258,** 471 (1958).

HAIR GROWTH

(*Continued from page 177*)

bits. Jaffe[13] found that, if an ointment containing cholesterol was rubbed into the skin of rabbits, hair growth was promoted, probably by activating the

dormant follicles. However, it is a well-established fact that any non-specific irritation, even rubbing of the skin, will cause a new hair cycle in the rabbit. Consequently, it was found by Linser and Kahler that cholesterol was no more beneficial with regard to inducing hair growth than any other ointment. In spite of all this work, however, the formulation of cosmetic products containing cholesterol continues, and will, no doubt, flourish until such time as the public learns to trust the scientist as much as they now do the advertiser!

At the present time, pantothenic acid is finding widespread use in preparations for the inducement of hair growth. In spite of almost ridiculous claims by some manufacturers, we must conclude with Flesch[14] that, "there is no objective evidence available to support the assumption that pantothenic acid has a biochemical role in the production of hair. Final judgment on its clinical value as a hair growth-promoter must await controlled clinical studies."

Rothman[15] has considered the use of hydrolysed hair in the treatment of hair loss. He points out that these preparations have no advantage over adequate supplies of protein. The body normally utilizes the protein by splitting it into its component amino acids, and then building hair from these amino acids. A more logical form of treatment would be to include such amino acids as cystine and methionine in the preparation but, here again, there is absolutely no evidence that hair loss in man originates as a result of a definite cystine deficiency. We must conclude, then, that, at the present time, there seems no justification for the inclusion of these hair hydrolysates in hair preparations designed to treat alopecias.

The influence of hormones on hair growth has received attention from many authors, and there now exists a large literature on this subject. It is of interest to recall that it was Aristotle who first stated that eunuchs, children and women do not become bald. Hamilton has reported that a type of male baldness can be developed in genetically-disposed eunuchs. Thus, it seems that we have the rather paradoxical situation that, whereas male sex hormones seem able to encourage hair growth on several other parts of the body, these hormones do the very reverse on the scalp, and lead to hair loss.

The beard is, of course, much dependent upon the male sex hormones. We know that eunuchs and other hypogonadal men have no beard. Testosterone seems to be essential for beard growth and, since the secretion of this male hormone decreases with age, decreased growth of the beard in old age can be stimulated by testosterone treatment.

Milberg[16] considers that the sebaceous glands and human sebum may play a very important role in the etiology of common male baldness. It was observed that workers in the synthetic rubber industry who had occasion to handle neoprene rubber lost their hair. This hair loss was not of a permanent nature;

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HAIR GROWTH

(*Continued from page 255*)

only the scalp hair was involved. As a consequence of further research into this matter, it became apparent that a particular chemical configuration,—CH=CH—, caused this loss of hair. From a chemical point of view, a relationship exists between dimers of chloroprene and vitamin A and squalene, a component of natural sebum. When both vitamin A and sebum were tested for possible depilatory action, they were found to show such a property, in addition to being able to inactivate sulfydryl groups. In addition, it was shown that linoleic and oleic acids, both of which are present in sebum, could exert a depilating action on hairs of laboratory animals. An interesting outcome of this work was the finding that, in cases of hypervitaminosis A, hair loss resulted. This hair loss ceased when the excessive intake of the vitamin was stopped.

A variety of chemicals are excreted in the hair. Arsenic, for example, is often present in hair, since keratin has a particular affinity for this element. Copper, iron and zinc are also found, together with lead. After poisoning by selenium, the latter substance is deposited in hair in high concentrations.[17]

Finally, we may mention the interesting work of Spencer and Williams[18] on the influence of bromobenzene and cystine on the bromine content of rat hair. Rats placed on a normal diet were fed bromobenzene, an inhibitor of sulfydryl groups. The bromobenzene duly appeared in the hair, in approximately similar amounts to those found in the other tissues. However, when the rats were kept on a cystine-deficient diet, the concentration of bromobenzene in the hair was very much greater than before. It was suggested that, in the case of the cystine-deficient animals, the bromobenzene appeared in the form of an addition product with cysteine, bromophenylcysteine, in an attempt to substitute for the deficient cystine.

This survey of some aspects of hair growth, while in no way comprehensive, will, it is hoped, provide cosmetic chemists and others interested in hair with a working knowledge of a very complex, but highly important field of study.

REFERENCES

1. Basler, Munchen med. Wchnschr., **72**, 1019-20, (1925).
2. Sokolowsky, Dermat. Wchnschr., **96**, 373-77, (1933).
3. Schultz, Human Biol., **3**, 303-21, (1931).
4. Sokolowsky, Dermat. Wchnschr., **88**, 432-37, (1929).
5. Crew and Mirskaia, J. Genetics, **25**, 17-24, (1931).
6. Bulliard, Ann. de dermat. et syph., **4**, 386-91, (1923).
7. Danforth, Arch, Dermat. & Syph., **11**, 494-508, 637-53, 804-21, (1925).
8. Fuchs, Ztschr. f. Biol., **98**, 215-20, (1937).
9. Flesch, Chapter 26, "Physiology and Biochemistry of the Skin," by S. Rothman, University of Chicago Press, 1954.
10. Eaton and Eaton, Science, **86**, 354, (1937).
11. Myers and Hamilton, Ann. New York Acad. Sci., **53**, 562-68, (1951).
12. Flesch, op. cit. page 622.
13. Jaffe, Klin. Wchnschr., **5**, 507-508, (1926).
14. Flesch, op. cit. page 624.
15. Rothman, in "Handb. d. Haut u. Geschlechtskr," be Jadassohn, **1/2**,-226, (1929). published by Springer-Berlin.
16. Milberg, J. Soc. Cosmetic Chemists, **4**, No. 4, 264-8, (1953)
17. Fuchs, op. cit., pp. 641-645.
18. Spencer and Williams, Biochem. J., **46**, 460-65, (1950).

HYDROLYSIS

(*Continued from page 178*)

Zimmer of the St. Louis College of Pharmacy covers the time of hydrolysis of a 1:1 dilution of a 29 per cent SLS solution adjusted to a *p*H of 1.1 by the addition of sulfuric acid.

Figures 2 and 3 show hydrolysis rates of similar solutions, the difference being the concentration of SLS. The temperatures selected are based, not on exaggerated conditions, but rather on possible storage conditions to which commerical products can be subjected. It should be noted that the initial *rate* of hydrolysis is produced by the acid initially added (5 per cent hydrolysis) so that, if the curve shows 10 days or 60 days are required to reach the 5 per cent additional level, then the true time of zero hydrolysis should be at least 10 or 60 days earlier.

Table 1 is a tabulation of a number of solutions of various starting *p*H values. Solutions at a *p*H of 4 or above show essentially no hydrolysis under the conditions of the test. At neutral *p*H in those solutions containing some sodium bicarbonate, elevated temperatures evidently drive off CO_2 to cause a rise in *p*H.

TABLE I

Percent Hydrolysis of 5% Solutions of SLS After 1 Month at Various Temperatures

SLS	Starting pH	RT	37°	50°	Final pH of 50°C Sample
C	2.61	0	0	46%	1.45
C	2.75	0	0	66.8%	1.3
A	2.85	0	0	46.1%	1.55
A	3.65	0	0	12.8%	2.1
C	4.00	0	0	2.9%	3.1
A	5.1	0	0	0	
A	7.2	0	0	0	9.6
C	7.3	0	0	0	7.8
C	9.0	0		0	9.0
C	10.0	0		0	10.2

Discussion

The solutions used in this study were not buffered. Even so, it appears that low *p*H (below 2.5) is needed for accelerated hydrolysis, and an elevated temperature. Observation of the solutions as they approached *p*H 2.2 showed them to be perfectly clear, but on standing further they would become cloudy. The titratable acid yielded by hydrolysis would increase, the clear solution separated into two or more phases and finally an oil layer (alcohol) breaks out on top with a clean acid layer below. On cooling, the oil crystallizes.

Conclusions

(1) Sodium lauryl sulfate is inherently stable, being neutral in solution.

(2) Higher temperatures accelerate decomposition.

(3) Solutions having *p*H values higher than 3 do not exhibit rapid change and, when the *p*H is above 5, do not show hydrolysis even at highest "shelf" temperatures.

(4) At very high temperatures (near boiling) and hydrogen ion concentrations, breakdown can be very rapid.

(5) Expericence has shown that gross mistreatment such as spot heating can start hydrolysis, with the resultant local low *p*H initiating such widespread breakdown as to result in a total loss.

(6) Since hydrolysis is slow at *p*H levels above 4, buffering at these levels should result in prolonged stability. One such system has been maintained for ten years.

PRODUCTS PARADE

(Continued from page 185)

PHARMACEUTICAL PRODUCTS INTRODUCED NATIONALLY
1949 — 1958
A Ten-Year Period

	Number of firms	Total new products	New single chemicals	Duplicate single products	Compounded products	New dosage forms
1949	84	389	40	147	202	170
1950	100	326	28	100	198	118
1951	86	321	35	74	212	120
1952	89	314	35	77	202	170
1953	107	353	48	79	226	97
1954	101	380	38	87	255	108
1955	124	403	31	90	282	96
1956	126	401	42	79	280	66
1957	127	400	51	88	261	96
1958	126	370	44	73	253	109
		3657	392	894	2371	1150
New dosage forms		1150				
		4807				

New single chemicals are products which are new single chemical entities not previously known, and developd by one manufacturer.

Duplicate single products are products such as reserpine, dioctyl sodium sulfosuccinate, which are put out by various manufacturers.

Compounded products are those individual products having more than one active ingredient.

New dosage forms are products originally marketed, for example, in tablets and now offered in ampuls, suppositories, etc.

available by Merck Sharp & Dohme under the name of Ketonil.

Sales and revenue of manufacturers have no doubt benefited in 1958 from the new products marketed in 1957. An outstanding example is Diuril of Merck Sharp & Dohme, which was distributed in December 1957. However, a review covering a prolonged period of years of the various therapeutic classifications for which products have been made available shows only too clearly the star-like success of the few, their replacements by others, the mad scramble and juggling for position to get on the bandwagon of a new form of therapy, and the silence in the bottomless pit into which many hundreds of thousands of dollars have been sent for the promotion of poorly designed and conceived products. (This sentence no doubt belongs in the department of rich purple prose, but it still pictures the situation truthfully.)

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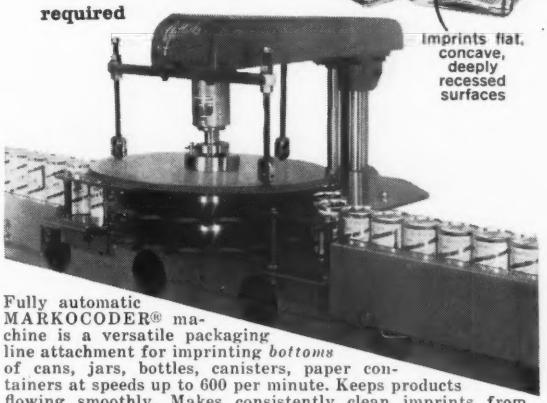

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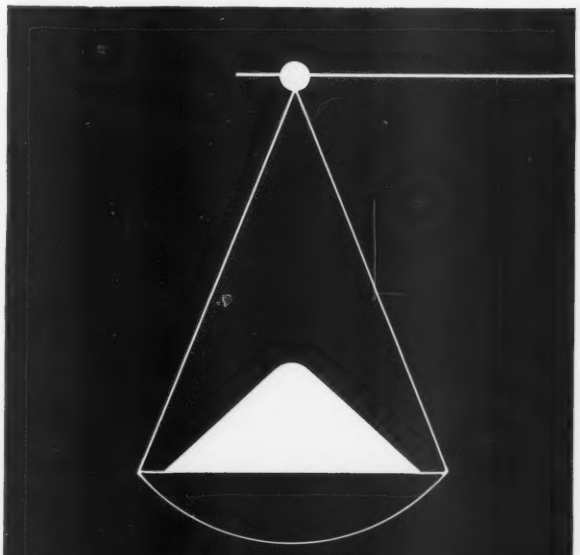

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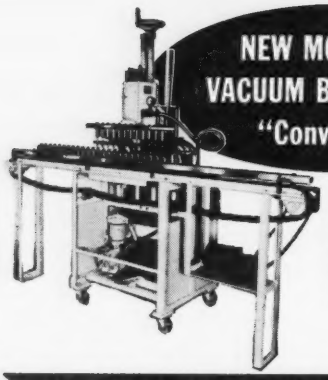

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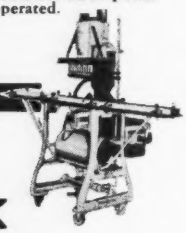

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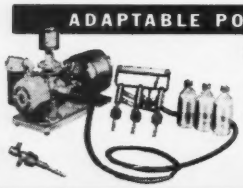

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PATENTS

(*Continued from page 201*)

New Form of Old Compounds Held Patentable

Although many of us engaged in the day-to-day job of doing research and attempting to protect the fruits of research may feel that more and more obstacles are being placed in the way of obtaining patent, the situation actually is not as black as it may sometimes appear. Consider new forms of the same chemical compound. In other words, we are not here concerned with different *chemical* compounds but actually with the same chemical material.

It may come as a surprise to many to realize that it is possible to obtain a patent on a new *form* of the *same* chemical compounds. This is not a recent development by any means. Perhaps one of the best-known examples of a valuable patent having been obtained on an old compound is the so-called "aspirin" case. There, the compound, sodium salt of acetyl salicylic acid, was known, albeit in impure form. The German, Hoffmann, came along and made it in pure form. He not only succeeded in obtaining a patent but the Courts upheld its validity, as the pure compound had therapeutic value, whereas the impure compound had no such value.

Another aspect of this same small area where patents on old compounds may be obtained is the so-called "product of nature" situation. Readers of this column will recall that in the April 1958 issue it was reported that an upper Federal Court had held that products of nature were patentable in certain cases. Reference is made to the case involving Merck and Olin Mathieson, in which case Merck's patent U. S. 2,703,302 on a vitamin B_{12}-active composition was involved. Other well-known cases in the "product of nature" category involved adrenalin and pectin.

Still another aspect of the subject we are considering is the one involving stereoisomers. We are referring to the situation where the racemic, levo, or dextro form of a material may be known and a different stereoisomeric form is made and becomes the subject of a patent application. In such event it is possible in some cases to obtain patent protection. The

highest authority on the question of what is patentable, namely, the U. S. Court of Customs and Patent Appeals, has held, for example, that a claim to 1-α-hydroxy-β, B-dimethyl-γ-butyro lactone was patentable over the racemic form, the later form not having been known as such as of the application filing date.

The aspects of this question already considered are more or less generally well known. However, there is one aspect which is quite uncommon, namely, the matter of making an old compound in a new *mechanical* form. Such a new form may be patentable. In this connection, the U. S. Patent office Board of Appeals recently held that a new form of crystalline procaine-benzyl penicillin was patentable.

The inventors found that crystalline procaine-benzyl penicillin in the form of platelets having a length-to-width ratio of about one were superior to the known crystalline procaine penicillin prepared by the usual method, which resulted in thick elongated rods or needles having their length substantially greater than their width, in the order of three to six times as great. The advantage lay in the fact that the known form is impracticable for use in suspensions for intramuscular injection by means of the usual syringes because the crystals often block them.

The Board ruled that the mechanical form of the compound was clearly related to the mechanical advantages that the new form afforded and, further, that no one of ordinary skill could have foretold that the objectionable feature of the known crystals could be overcome by making the crystals in the form of platelets having a length-to-width ratio of about one. The Board also found that the prior art not only lacked any teaching or suggestion of the desirability of imparting the particular crystalline form covered by the claim but did not teach how to obtain it.

The decision was by no means the first example where patentability was recognized in connection with a new mechanical form of an old compound. Among other cases where a similar result was reached may be cited the carbon black case where a new form of carbon black was upheld as patentable because it was substantially dustless and therefore cut down the amount of dust in rubber plants. Another case that could be mentioned is one that involved crystalline calcium carbide, which was held patentable over a non-crystalline or amorphous product. In that case it was found that "bulk for bulk, the yield of gas in the case of the amorphous compound would be smaller, that the tendency to breakage would be greater, both because the substance was more porous and less hard, that for such matters as transportation and dangerous dusts the amorphous would be inferior material even if equally pure."

It should be noted, however, that the mere provision of a new mechanical form of an old material does not guarantee patentability; the new form must be shown to have certain advantages over the old, as the direct result of the new form itself.

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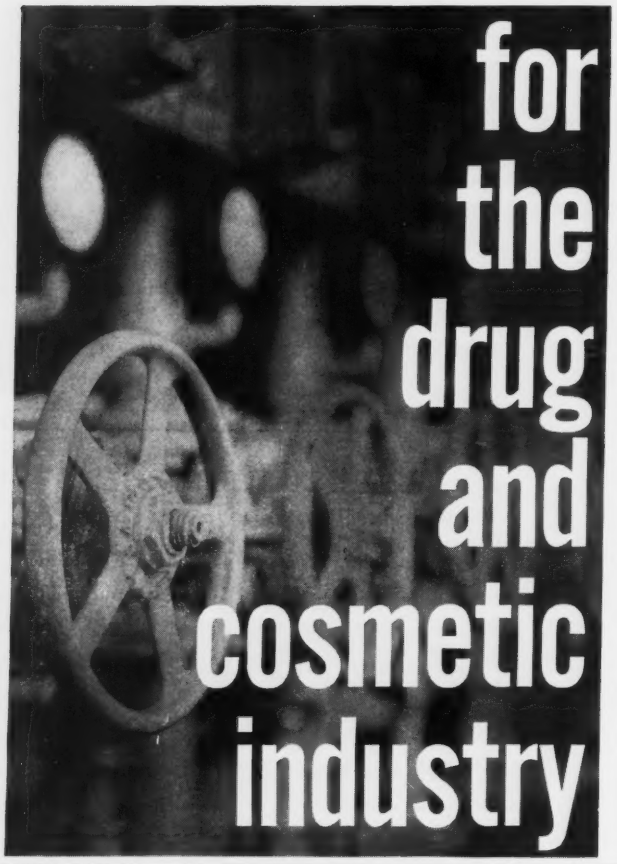

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